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CANADIAN AGRICULTURAL OBJECTIVES, 1943

The critical phase of munitions production in Canada has been reached and passed. The critical phase in food production is still before us. To be prepared for whatever lies ahead, farmers are asked to produce more in 1943 than was yielded by the abundant harvests of 1942. In general, farmers are asked to produce as much as they possibly can of nearly every farm commodity with all the means at their disposal.

In order that farmers should have more specific understanding of where the need is greatest and the actual quantities of the important farm products required, a statistical picture of over-all requirements was built up by a Central Committee on Food Requirements and Production Capacity under the Agricultural Supplies Board. The Central Committee and seven Sub-Committees working on the project took into consideration the United Nations requirements, Munitions and Supply requirements for our armed forces, the provisioning of ships of the allied nations calling at Canadian ports, Red Cross needs and the building up of a reserve stock-pile to feed the hungry people in the occupied countries. The Committee also gave careful thought and consideration to domestic needs, for intelligent and accurate workmanship in the production of the tools of war requires healthy bodies and clear minds. There are minimum nutritional requirements below which we dare not go.

The food requirements picture provided the basis for the national production objectives. These were presented to the Dominion-Provincial Conference at Ottawa, December 7 to 9, 1942. In full realization of the task before them the provincial representatives accepted the Dominion objectives and then undertook responsibility for the provincial share of the total. A number of provinces have already proceeded to the next logical step in the 1943 agricultural programme and have set up goals for areas and communities within the province. In this way the farmer is given some responsibility in planning the programme of which a part ultimately becomes his job and his individual objective.

Dairy Products.—Of all the foods produced, milk is perhaps first in importance. It is essential in the diet to protect the health of our people. In the form of cheese, evaporated milk and milk powder, it can be concentrated into nourishing food which can be carried long distances without deterioration to fighting forces and civilian populations all over the world. In meeting the 1943 production objective, Canadian dairymen are faced with the greatest challenge in the history of the industry.

The total production of milk necessary to meet requirements for the calendar year 1943 is estimated at 18,500 million pounds. This represents an increase of approximately 1,000 million pounds or 6 per cent over the estimated total production of 1942. A large proportion of this increase is needed for expanding requirements for butter by the Department of Munitions and Supply, ships' stores and Red Cross boxes. The butter increase called for is 40,000,000 pounds or 15 per cent over last year's production. The manufacture of factory cheese is to be maintained at the 200 million mark but increases are needed in

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ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Living Costs and Production Indexes Computed by Dominion Bureau of Statistics: Index of Industrial Wage Rates Published by Department of Labour

Year	Wholesale Prices 1926=100				Retail Prices		Production and Wages 1926=100		
	All commodities (1)	Farm products (2)	Field products (3)	Animal products (4)	Urban Living Costs 1935-1939 =100 (5)	Farm Living Costs 1935-1939 =100 (6)	Physical volume of business (7)	Industrial production (7)	Industrial wages rates (8)
1913....	64·0	64·1	56·4	77·0	79·7	79·6	....	....	53·7
1914....	65·5	70·2	65·4	78·3	80·0	82·0	....	....	54·4
1915....	70·4	77·9	76·9	79·5	81·6	86·3	....	....	54·8
1916....	84·3	89·8	88·8	91·4	88·3	93·6	....	....	58·8
1917....	114·3	128·5	134·5	118·4	104·5	111·6	....	....	67·4
1918....	127·4	132·6	132·0	133·6	118·3	131·4	....	....	78·0
1919....	134·0	146·7	142·6	153·5	130·0	143·0	71·3	65·5	93·1
1920....	155·9	160·6	166·5	150·8	150·5	170·7	75·0	69·9	111·5
1921....	110·0	103·7	100·3	109·5	132·5	139·5	66·5	60·4	101·9
1922....	97·3	88·0	81·4	99·0	121·3	127·5	79·1	76·9	96·7
1923....	98·0	81·5	73·3	95·1	121·7	127·9	85·5	83·8	98·9
1924....	99·4	88·1	82·7	97·2	119·5	125·1	84·6	82·4	100·1
1925....	102·6	101·0	98·2	105·6	120·6	123·6	90·9	89·7	99·4
1926....	100·0	100·0	100·0	100·0	121·8	120·9	100·0	100·0	100·0
1927....	97·7	102·1	99·9	105·7	119·9	119·5	106·1	105·6	102·2
1928....	96·4	100·7	92·6	114·3	120·5	118·3	117·3	117·8	103·2
1929....	95·6	100·8	93·8	112·5	121·7	117·4	125·5	127·4	105·2
1930....	86·6	82·3	70·0	102·9	120·8	113·7	109·5	108·0	105·8
1931....	72·1	56·3	43·6	77·6	109·1	103·7	93·5	90·4	101·5
1932....	66·7	48·4	41·1	60·7	99·0	97·7	78·7	74·0	95·4
1933....	67·1	51·0	54·8	59·7	94·4	95·7	79·7	76·8	90·3
1934....	71·6	59·0	53·8	67·7	95·7	97·8	94·2	93·6	91·5
1935....	72·1	63·5	57·3	74·0	96·2	97·9	102·4	103·3	94·1
1936....	74·6	69·4	65·8	75·3	98·1	98·3	112·3	114·4	95·9
1937....	84·6	87·1	88·3	85·0	101·2	102·8	122·8	120·8	102·9
1938....	78·6	73·6	69·0	81·3	102·2	101·9	112·9	114·6	106·0
1939....	75·4	64·3	54·2	81·2	101·5	99·4	122·4	125·6	106·4
1940....	82·9	67·1	55·9	85·2	105·6	108·6	145·4	156·1	109·1
1941....	89·9	71·2	56·5	95·8	111·8	114·2	135·6	148·6	119·9
1942....	95·7	81·8	66·4	107·4	116·8	....	....	....	....
1941							1935-39=100		
Sept....	93·2	73.3	57·6	99·6	114·7	....	177·6	196·9	....
Oct.....	93·8	74·1	57·9	101·1	115·5	....	178·7	198·6	....
Nov....	94·0	74·1	57·4	102·0	116·3	....	183·7	202·3	....
Dec....	93·6	74·6	59·2	100·2	115·8	....	193·9	208·0	....
1942									
Jan.....	94·3	77·3	62·8	101·5	115·4	....	192·3	216·5	....
Feb.....	94·6	78·4	64·3	102·1	115·7	....	192·9	216·3	....
Mar.....	95·1	78·8	64·6	102·7	115·9	....	189·3	207·7	....
April...	95·0	79·5	65·0	103·7	115·9	118·4	198·1	220·8	....
May....	95·2	80·2	65·5	104·8	116·1	....	195·5	217·3	....
June....	95·8	81·5	66·3	107·0	116·7	....	200·0	222·1	....
July....	96·0	81·1	67·7	103·6	117·9	....	203·7	229·4	....
Aug.....	95·5	81·3	68·4	102·9	117·7	....	205·7	232·5	....
Sept....	96·0	84·3	67·6	112·2	117·4	....	206·1	235·1	....
Oct.....	96·8	85·7	67·9	115·5	117·8	....	207·2	238·6	....
Nov	97·1	86·3	68·3	116·3	118·6	....	207·8	239·3	....
Dec	97·2	87·0	69·0	117·0	118·8	....	221·2	250·8	....

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1. See Prices and Price Indexes 1913-1928, pp. 19-21, 270-289 and 1913-1939, p. 17.
2. Wholesale prices of Canadian products of farm origin only. See prices and Price Indexes 1913-1937, p. 52, and Monthly Mimeographs 1941-42.
3. Wholesale prices of grain, fruits and vegetables.
4. Wholesale prices of animals and animal Products.
5. See An Official Cost of Living Index for Canada, 1940.
6. Index numbers of Farm Family Living Costs 1913-38 and Farm Living Expenditures 1934 and Farm Family Living Costs mimeograph.
7. Monthly Review of Business Statistics, p. 8, and Monthly Indexes of the Physical Volume of Business in Canada, supplement to the monthly Review of Business Statistics, November, 1932. Yearly index numbers for 1940, subject to revision.
8. Department of Labour, *Labour Gazette,* January 1942. Index for 1941 subject to revision.

evaporated and powdered milk. The amount available for consumers as fluid milk is to be maintained at 5,000 million pounds.

Hogs.—Total minimum requirements of pork for 1943 are estimated at a record total of over 1 billion pounds, or about 223 million pounds (28 per cent) larger than the production of 1942. Export bacon requirements of 675 million pounds are 167 million pounds greater than the quantity secured for export in 1942.

In order to provide for total pork requirements in 1943 a commercial slaughter goal of at least 8 million hogs is desirable. This would represent an increase of 28 per cent over the slaughterings for 1942.

Canada's food production effort is judged largely by the fulfilment of the bacon contract with the British Ministry of Food. Its size grips the imagination. The present contract in the fourth year of the war calls for over three times the pre-war shipments of bacon to Britain. When this is converted into labour, equipment and feed, breeding, farrowing, weaning, feeding, slaughtering and processing, it represents a tremendous organization extending from shipboard to thousands of farms throughout Canada. If the objective is reached, it will be an outstanding victory for Canadian farmers.

Other Meat Animals.—The objective in the production of dressed beef is set at 622 million pounds representing an increase of 135 million pounds or 28 per cent over the output of inspected slaughter in 1942. Due to the plentiful supply of feed, it is expected that this increase will be attained through increased average weights and an increase in the numbers of cattle slaughtered in Canada. The total cattle output anticipated in 1943 is 1,197,315 head or 9 per cent over 1942.

No change is anticipated in the domestic requirements for veal in Canada. The anticipated slaughter in 1943 is placed at 769,000 head. In response to the increased demand for wool, and other factors, numbers of sheep on Canadian farms have been increasing. As a result it is expected that the commercial slaughter of sheep and lambs in 1943 may total about 900,000 head. This is an increase of 12 per cent over 1942.

Eggs and Poultry.—The production objective in 1943 is 345 million dozen eggs, an increase of 26 per cent over 1942 and 41 per cent over 1941. Canada's endeavour in setting up a production objective is to supply all ordinary requirements of the domestic market and such quantities as Britain may require. Before the war exports of eggs averaged 3 to 4 million dozen per annum. The 1943 export objective to meet the United Kingdom requirements is 63 million dozen which must be reduced to a powdered form in order to conserve shipping space. A few years ago such a figure would have appeared fantastic but in the fourth year of the war poultrymen while frankly admitting that it will not be easy, believe the objective is attainable.

Grain and Forage Crops.—Canada could not attain the goals set for live stock and live stock products if feed supplies were limited. Fortunately supplies are abundant. In 1942 Canada's grain harvest surpassed all previous records.

Canada's commitments for the shipment of bacon, eggs and cheese to the United Kingdom and the need for increasing in 1943 the production of other live stock and dairy products, required the assurance of substantial supplies of feed and forage crops. Consideration was directed, therefore, to the position of oats, barley and forage crops and to flaxseed, another crop closely related to dairy production and vital as a wartime source of oil supply. In every case it was found desirable that acreage in these crops should be maintained or increased. The acreage objectives established for these essential crops in 1943 show the following increases in millions of acres over 1942: Oats 1·6; barley 0·8, and forage crops 1·0, making a total increase of 3·4 million acres.

Since it is also one of the objectives for 1943 to maintain summerfallow at its high level of 1942, all of the suggested increases in oats and barley and *one-half* of the increase in hay and clover and alfalfa are expected to come out of land which was seeded to wheat in 1942. This means that these more essential crops will take up 2·9 million acres of the 1942 wheat area. Thus the wheat acreage objective of 18·7 million acres for 1943 is a residual figure emerging from an analysis of the supplies and requirements of other crops and bears no relationship to actual wheat requirements. Had wheat acreage for 1943 been considered on the basis of actual or probable requirements in 1933-44, a much smaller figure would have been suggested.

Fruits and Vegetables.—The importance of fruits and vegetables in the diet demands that adequate supplies be provided. Future export requirements for fresh, processed or dehydrated products are undetermined but if these should be substantial, domestic supplies would be curtailed or reduced. It appears desirable, therefore, to increase wherever possible, the production of fruits and vegetables to protect both domestic and export requirements.

On the basis of the 1943 estimates, the total supply of fresh fruit produced in Canada is expected to be in excess of estimated requirements. An increase in the production of potatoes is asked for by establishing an acreage objective of 560,000 acres or 11 per cent higher than 1942. An increased production of processed tomatoes, particularly in the form of juice, is needed in 1943 to meet minimum requirements. An increase in the acreage in green and root vegetable crops appears necessary in order to ensure supplies at least equal to the production during the favourable season of 1942.

Other Crops.—A small increase of tobacco acreage is asked for in order to meet the needs of Canadian tobacco manufacturers who are now using Canadian leaf almost entirely. The production of flaxseed is to be maintained at 1,500,000 acres in 1943. The 1943 acreage objective for soybeans is 90,000 acres, sunflower seed 100,000 acres and rape seed 5,000 acres.

The production and processing of fibre flax in Canada was almost negligible prior to 1939. With the outbreak of war, steps were taken to increase production and processing capacity. By 1942 thirty-eight mills were producing line fibre and tow fibre from the crop harvested from 47,000 acres. The goal for 1943 is 75,000 acres.

It is estimated that the 63,300 acres of sugar beets grown in Canada in 1942 produced 200 million pounds of refined sugar or about one-fifth of Canada's normal consumption. The objective for 1943 is the maximum amount of beet sugar that Canada can produce with present plant facilities. It is estimated that the full utilization of present processing and refining facilities will take care of a crop of average yield from 90,000 acres. To supplement these sugar supplies, all the honey, maple syrup and sugar that can be produced will be needed.

ADMINISTRATION OF WARTIME AGRICULTURAL CONTROLS IN CANADA

F. Shefrin

Since the war began in September 1939 several agencies have been established to guide agricultural production, conserve farm supplies and make for equitable distribution of agricultural commodities at home and abroad. Agricultural policy has changed from one designed to encourage farmers to continue their regular practices unless and until advised otherwise, to one of an all-out effort in agricultural production. More live stock, live stock products, dairy products, feed and fodder are wanted. On the other hand less farm labour, farm machinery, fertilizer and seed are available. Government agricultural policy has had to be fashioned to produce more with less, to meet increased needs for food abroad and at home, and to export greater quantities in more concentrated forms. At the same time a balanced production has to be maintained in the sense that cheese manufacture cannot be over-expanded at the expense of butter and concentrated milk products, nor beef cattle marketings increased at the expense of dairy production. Furthermore prices have to be regulated to prevent run-away inflation. This complex problem of organization of supplies and prices for war purposes has resulted in the formation of boards and committees, and the appointment of a score of co-ordinators and administrators—the mechanisms of agricultural policy.

Obviously a detailed account of the operations of the various agencies is not possible in this article, but a brief description will be given of the functions and general relationships of the various boards, committees, and their administrators.

The major task of all boards and auxiliaries is to work together to attain the greatest agricultural production with maximum use of limited supplies. The most difficult problem is to attain a continuity of accomplishment with minimum duplication of effort. This end has not always been met, but adjustments are being made from time to time aimed at removing duplication, and avoiding inefficiency.

Generally speaking, the Cabinet and Parliament are responsible for the formulation of agricultural policy. However, in practice, the Departments of Agriculture, Finance, and Trade and Commerce have been assigned the task of defining and putting into action policies set forth. In broad terms the Department of Agriculture is responsible for the maintenance of agricultural production, the Department of Finance for prices and distribution, and Trade and Commerce, specifically for the marketing of wheat and exports of all agricultural commodities. But the departments co-operate in the determination of production and price policy. Accordingly, under present war conditions, the Department of Agriculture has set up the Agricultural Supplies Board, Bacon, Dairy and Special Products Boards, and appointed a number of administrators. There is the Wartime Prices and Trade Board and its auxiliaries responsible to the Minister of Finance, and in the Department of Trade and Commerce the Canadian Wheat Board, the Export Permit Branch and the Canadian Shipping Board. It should be noted that with the exception of the Canadian Wheat Board the agencies in the departments other than agriculture do not apply solely to agriculture but rather to the whole economy.

The Agricultural Supplies Board which is the major wartime agricultural board will be dealt with first.

The Agricultural Supplies Board.—With the outbreak of war the Minister of Agriculture called together the senior officials in the Department to discuss ways and means "to keep Canadian agriculture functioning in a manner which would supply the food and fibre needs of the people of Canada and their Allies during the period of the war and leave the Canadian farmer, as far as possible, in a position to follow his normal programme when peace returns." This informal group was set up as an Agricultural Supplies Committee on September 9, 1939. The Committee consisted of six senior officials of the Dominion Department of Agriculture and its function was to act as a central directive agency. As the tasks of the committee became greater it was necessary to enlarge this group and on March 6, 1940, the name was changed to Agricultural Supplies Board. The Board was given broader powers and increased duties. The general purpose of the Board is to ensure the utilization of the agricultural resources of Canada to the best advantage during the war. In detail, the Board is to provide direction in agricultural production and to safeguard, maintain and distribute supplies of feed, seed, fertilizers, and other materials used in agricultural production and for the preparation and conservation of agricultural products.

The Board co-operates with the Provinces, with producer organizations, with such advisory committees representative of producer or trade organization as developments may require from time to time, and with the various divisions of the Dominion Department of Agriculture. In addition, two members of the Agricultural Supplies Board are members of the Wartime Prices and Trade Board.

It should be pointed out that the Board limits itself to proposals for production programmes in the light of wartime needs. The carrying forward of the specific programmes suggested, however, is recognized by the Board as the function of the provincial authorities in co-operation with producer organizations and officers of Dominion Department of Agriculture.

The problems and responsibilities that the Board faces vary from time to time. It has encouraged increased output of certain types of supplies that were produced in Canada but not in sufficient quantity to meet wartime needs such as vegetable seeds, flaxseed, dairy products, hogs and eggs. It has assisted in the movement of supplies to areas where they were needed as in the case of feeds. The search for new sources of or substitutes for materials formerly imported from countries now cut off by war developments, for example certain fertilizers and pesticides, has been encouraged. In addition since its inception the Board has been interested in the control of exports of such commodities that are required by Canada for agricultural purposes and consumption. During the first 18 months of the war, control over exports was exercised by separate order in council for each commodity, and applications for export permits were made to the Board direct. In April, 1941, such control measures were consolidated under the Export Permit Branch of the Department of Trade and Commerce, a new Branch established for this purpose. The Board recommends or refuses all applications for export licences received by the Permit Branch for the export of any of the commodities which have been brought under export control, on the Board's recommendation, such as millfeeds, fertilizers and seeds.

The Board has also encouraged and assisted in the establishment of dehydration plants for eggs and vegetables. It assisted in getting priorities on materials of importance in war industries, for example wire for fences, milk cans and other equipment needed for production. It is important to point out at this time that the Agricultural Supplies Board makes representations to the Department of Munitions and Supply as regards priorities. This Department is responsible for the allocation of war materials for munition, industrial and farm needs. Thus the Fertilizer and Pesticides Administrator has to work within the bounds set by the chemical controller, as certain chemicals are required for munitions and fertilizers and pesticides. In the case of farm equipment which is now rationed owing to the shortage of steel, the Supplies Board, through its technical adviser on farm machinery presents the farmer's requirements to the Administrator for Farm and Construction Machinery and Municipal Equipment. In addition, agricultural advisory committees to arbitrate, if necessary, on individual farmers' requests for machinery have been set up in fourteen areas throughout Canada.

From the very start the Board established committees on seed supplies, fertilizers and pesticides, whose jobs were to maintain, conserve and promote better use of various agricultural supplies. In the latter part of 1941 and beginning of 1942, Administrators for Seeds, Feeds, Fertilizers and Pesticides and Flax Fibre were appointed. The job of these administrators is mainly to regulate the distribution of these products so as to meet present and potential needs. The duties of the Administrators on the whole are inspection; possession and disposition of the product in question; fixing quantities that may be bought and sold or distributed; licensing; and with the concurrence of the Wartime Prices and Trade Board fixing maximum, minimum or specific prices or markups.

The Administrators are responsible to the Agricultural Supplies Board in so far as their main work of ensuring supplies is concerned; they likewise have been named by the Wartime Prices and Trade Board as Administrators of prices as they apply to the products over which their jurisdiction extends.

Three boards have been established to deal with specific products or groups of products, Bacon, Dairy Products, and Special Products, respectively, and to administer the export contracts with the United Kingdom Food Ministry.

*The Bacon Board.**—The Bacon Board of 4 members and one secretary manager and its Advisory Committee of 8 was established on December 20, 1939, and commenced operations January 20, 1940. The prime reason for the establishment of this Board was that the British Ministry of Food felt that movement of bacon from Canada to the United Kingdom could be facilitated if supervised by a single agency.

The chief duties of the Board are as follows: To ensure regular supplies of bacon as required; to arrange price differentials between grades so as to ensure maintenance of pre-war quality as specified by the Bacon Agreement; to regulate marketings to the extent necessary to ensure that export requirements will be available; to store product in order to supplement supply in seasons when current marketings are inadequate; to see that hog prices bear a fair relation to the agreed price for bacon and to create a fund out of returns on exports during ensuing months from which to support hog and bacon prices later in the year (advances in the price of bacon to be reflected in the price paid for hogs) and to pay storage charges.

The Board has played an active part in the negotiation of 3 of the 4 bacon contracts with the British Food Ministry, and supervised the carrying out of contract commitments. This has necessitated extensive control over the whole hog industry, including production programmes, marketing, processing, storage, transportation and domestic distribution. The Board delivers bacon to the British Food Ministry at Canadian Seaboard at which point the latter assumes responsibility for transportation to the British consumer. The British Government makes payment to the Bacon Board on two major grades of Wiltshire sides, A and B, with the Board making settlement to packers on a fully graded basis covering 24 different grades, weights and selections of sides as well as the various cuts.

Dairy Products Board.—The Board was established in May 1940. It was given the power to make all arrangements for the export of cheese and other dairy products as required by the British Ministry of Food.

The powers of the Board in more detail are to regulate and arrange for export, to require storing for future delivery, to determine prices to be paid manufacturers or exporters, to determine price differentials, to inspect dairy products and to reject products of poor quality for shipment to allied countries, to require exporters or manufacturers to give prioity to delivery of cheese for Britain, to fix minimum prices to be paid manufacturers and exporters, to require periodical returns, to license manufacturers and exporters, to determine the quantity of any dairy product owned or held by any person.

In brief the Board has at one time or another regulated the total stocks of cheese and butter in storage, allocated supplies for home and export consumption, and expedited the movement of dairy products overseas.

The Special Products Board.—Consisting of 3 members, was organized in April, 1941. The establishment of this Board was the outcome of a number of meetings between the Agricultural Supplies Board and representatives of the egg and poultry industry interested in the export of surplus Canadian eggs to the United Kingdom. Because of the expressed desire of the British Food Ministry to deal with a single agency in the export of eggs it was suggested that a special egg and poultry committee should be established to purchase and forward from Canada such eggs as might be required to fill British orders. In view of the fact that there were no definite long term contracts between the Dominion Government and the above Ministry covering eggs and poultry, it was decided to set up, instead of a special eggs and poultry committee, a Special Products Board which could deal not only with eggs and poultry export orders but also with orders for any other agricultural product for which arrangements for handling had not already been provided for under the Agricultural Supplies Board, the Dairy Products Board or the Bacon Board.

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* For more detail on the activities of the Bacon Board see Articles in Economic Annalist— October, 1940; February, 1941; October, 1941; October, 1942.

The powers of the Board include the right to regulate exports of products not covered by the other boards, to require anyone to deliver products needed at seaboard and to store if necessary, to determine prices to be paid provided the purchase price and all costs except administration are met out of amount received from United Kingdom Government. In addition to eggs and poultry the Board is also responsible for shipping such products as vegetables, apples and other fruits.

Wartime Prices and Trade Board.—This Board was also established as soon as war was declared in September, 1939. The price and distribution problems of agricultural products are only one group of problems with which the Board deals. Its powers have gradually been extended until to-day it exercises supreme legal authority over prices of goods and services of any kind whatsoever. It has the power to control the supply of all goods and services other than war material and supplies.

The function of the Board is to assure an adequate and continuous distribution of goods and services at reasonable prices and to prevent hoarding and profiteering.

Although the Board has appointed its own administrators, in a number of important instances it operates wholly or in part through previously constituted authorities. In the case of agriculture these include the Canadian Wheat Board, Bacon Board, Dairy Products Board, the several administrators of the Agricultural Supplies Board and the various provincial milk control boards. In all cases, however, concurrence of the Board is required in any matter affecting the fixing of maximum and minimum prices or markups. Through reciprocal representatives the Board maintains close contact with the central authorities in the field of agriculture. The Wartime Prices and Trade Board is also responsible for rationing at the consumer level.

In order to effectively administer maximum wholesale and retail prices, and to assure a satisfactory distribution of foodstuffs from producers to dealers, processors, manufacturers and ultimately consumers a food administration was set up.

The Foods Administration.—The Foods Administration Board is headed by a Foods Administrator. There are six Assistant Administrators, each in charge of one of the main sections into which the administration is divided. The main groups are: live stock and live stock products; fresh and processed fruits and vegetables; fishery products; manufactured foods; imported foods; and exports and distribution. Each assistant administrator has one or more directors in his division who are in charge of separate commodities. The Fats and Oils Administrator is not part of the Foods Administration but reports through that agency in respect to edible fats and oils. In addition there are numerous advisory committees which act in the capacity of consultants for the various administrators.

The Foods Administration is also interested in the problem of production in so far as it may affect adequate domestic civilian supplies. Accordingly it has been responsible for milk and butter subsidies. It has also been responsible for price adjustments that have resulted in increased returns to producers. Besides that definite statements have been issued from time to time calling for increased production of some specific commodity.

Wherever possible the Foods Administration and the various boards set up by the Department of Agriculture co-operate in formulating and administering policy. Four Department of Agriculture officials act as joint administrators for the Administration and the Agricultural Supplies Board. Wherever possible the functions of each group of agencies is defined so as to avoid duplication.

In addition to the Foods Administration there are several other agencies operating as representatives of the Wartime Prices and Trade Board. These are as follows:

The Canadian Wheat Board acts as administrator of grains for the Wartime Prices and Trade Board. This agency was first created by the Dominion Government in July, 1935. Its functions are to buy and sell grains, regulate delivery and storage, and administer prices.

The Canadian Wool Board Limited was set up in March 1942, by order in council for the purpose of acquiring, collecting, selling, and otherwise dealing in domestic and foreign wool. The reason for organizing the Board is found in the text of the order in council. "Due to the potential endangering of the supply of wool for Canadian requirements, it is deemed to be in the national interest to regulate the acquisition, conservation and distribution of domestic and foreign wool and related products, and to increase the production of wool in Canada by assuring to sheep growers a stable market at known prices for all production of wool during the present war and one producing year thereafter."

The Wool Board acts as an agent for the Wartime Prices and Trade Board in the purchase and distribution of the domestic clip for use as deemed wise in either military or civilian consumption. The Board is also giving major attention to ways and means of improving wool and popularizing the domestic product with the Canadian manufacturer.

The Wartime Food Corporation Limited was established in July 1942 as a subsidiary of the Commodity Prices Stabilization Corporation when a tight supply situation developed on the beef cattle market. The Corporation was set up under the Wartime Prices and Trade Board to operate in the domestic market and is given the power to buy and sell agricultural products. One of the first tasks of the Corporation was to ensure domestic supply of beef by means of purchases on the open market and control of exports of beef cattle.

The Commodity Prices Stabilization Corporation is a company, wholly owned by the Crown and is directly responsible to the Minister of Finance and to the Wartime Prices and Trade Board. It has the responsibility for administering the subsidies or other forms of assistance which may be required in connection with increased production at home and imports from other countries.

From the viewpoint of the farmer the activities of the Board are extremely important. By setting maximum and, in many cases minimum prices it provides guidance and incentive for the production of desired agricultural products.

In addition to these specialized agencies there are several joint committees.

Food Requirements and Production Capacity.—A special Committee was set up in October 1942, representative of the Agricultural Supplies Board, the Wartime Prices and Trade Board, the Reconstruction Committee, and the agricultural sub-committee of the Joint Economic Committees of the United States and Canada. The purpose of this committee was to determine the food requirements, domestic and export, and the nation's productive capacity.

The Committee worked out agricultural production objectives for 1943. These objectives were presented for approval to the provincial representatives who met in Ottawa in December of last year. Although programmes and policies had been disscussed with provincial government representatives and with the officials of farm organizations from time to time, this was the first time that specific overall production objectives have been set up as directives for farmers in making their plans for the new year.

Food Requirements Committee.—Each of the agencies described so far has its specific job in rounding out the food policy. However, no one agency can go ahead on its own in determining a set policy, disregarding other governmental bodies. As a matter of fact the representatives of departments and agencies of government found that in the formulation of policies most helpful to the war effort in regard to food production and supply, frequent exchanges of opinions were necessary. Thus Canada's food commitments to the United Nations have to be considered in relation to its capacity to produce, the domestic price ceiling, and the essential requirements of foods for domestic consumption. While Canada itself is not represented on the Combined Food Board (United Kingdom and United States), it has membership on all the sub-committees of the Combined Food Board in which it has a substantial interest. The various Canadian agencies and departments co-operate with this Board in supplying information on Canadian supplies, requirements and plans for production of foodstuffs.

In order to facilitate co-operation among the various governmental bodies and to centralize all sources of information issued, an overall co-ordinating and advisory agency known as the Food Requirements Committee was set up on October 22, 1942.

The Committee is composed of representatives of the Departments of Agriculture, External Affairs, Finance, Fisheries, Trade and Commerce, Pensions and National Health and the Wartime Prices and Trade Board.

This Committee considers all major questions of policy connected with food production and supply in Canada and with the supply of Canadian foodstuffs to other nations. In detail the Committee supervises the preparation of information on Canada's food position which it may desire to furnish to the Combined Food Board or any other similar body. It acts in advisory capacity on matters affecting food supply referred to it by the Cabinet War Committee, or by any of the departments and agencies of Government. The Committee has to deal with questions of policy arising out of the need for co-ordinating Canada's export commitments to the United Nations, the domestic food needs, and other factors which must be taken into account to ensure a balanced war effort. It makes recommendations on matters concerning embargoes or other export and import restrictions of foodstuffs, and on all proposed agreements concerning external trade in food.

Sub-Committees on Agriculture of the Joint Economic Committees of the United States and Canada.—The sub-committee was organized in the late fall of 1941. The functions of the committee as stated are to deal with the present and post-war problems of agricultural adjustments in the United States and Canada. Attention was first directed to specific current problems that pressed for immediate consideration. Accordingly, a series of resolutions with recommendations were presented to the Joint Economic Committees affecting production and trade in vegetable oils, fats, feed grains, potatoes and starch, and relating to the movement of farm machinery and labour. These recommendations were approved by the Joint Economic Committees and by the two governments, and steps were taken to put them into effect.

One of the main purposes of the agricultural sub-committee is to work out a programme whereby a greater degree of co-ordination in agricultural production and trade is to be achieved between Canada and the United States. Specifically it means the determination jointly of productive capacity and production goals or objectives in relation to the food requirements of the United Nations. Another task for the agricultural sub-committee is to work out methods of making adjustments from a wartime agriculture to a post-war agriculture.

Another step in the interests of further co-ordinating agriculture production and food distribution in the two countries was taken in January 1943 when a Canadian delegation headed by the Minister of Agriculture conferred with the United States Secretary of Agriculture and members of staff in Washington. At these meetings production objectives or goals were compared, shifts in production and export were discussed and an agreement in principle, on rationing, was reached. The conference also resulted in the establishment of a joint agricultural committee to keep under constant review, matters concerned with the production and distribution of agricultural products.

In summation, the various boards, committees and administrations are merely the mechanisms that put agricultural policy into effect. Policy making is a function of a people and its government.

THE PRODUCTION AND CONSUMPTION OF MEATS IN CANADA

H. K. Leckie

The current widespread interest in nutrition has centred attention on the protective foods. Among these, meat is included along with other animal products such as milk, butter, cheese and eggs. Canadians, in common with other Anglo-Saxon peoples living under similar climatic conditions, have always been fairly heavy consumers of meats. The production of meat animals on Canadian farms has not lagged behind either, enabling this country to supply not only domestic requirements, but to export surplus live stock and dressed meats. During World War II live stock production, particularly in the case of hogs, has received still greater emphasis and the total supply of meats in 1942 exceeded all previous records. Despite this fact, however, there has been much discussion of meat shortages, and, in actual fact temporary depletion of supplies has occurred. Meat rationing has been mentioned as a distinct possibility within the near future. In view of the apparent anomaly of famine in the midst of plenty, let us briefly consider some aspects of the situation.

Production.—The chief meat animals raised on Canadian farms are cattle, hogs, and sheep. Before beef, pork, veal, mutton and lamb appear on the meat counters throughout the country, however, important intermediate processes of marketing, slaughter and processing must take place. In earlier days most of the slaughter of live stock took place on the producers' own farms, but there has since developed centralization of the meat packing industry, with abattoirs located in all parts of the country. The live stock a farmer raises, therefore, may be disposed of in various ways including (1) slaughter on the farm for home consumption, (2) sale to a butcher for local consumption, (3) sale to a large packing plant for local or more remote domestic consumption or for export processing. Still another alternative is the direct export of animals alive. Accurate statistics of the number of animals slaughtered in the larger plants are available, since they operate, for the most part, under government inspection, but less information is available as to the extent of local and farm slaughter. So important has the packing industry become in the urban meat supply however, that when a sufficient volume of live animals fails to flow into these commercial slaughtering channels something serious develops in the meat distribution system.

In the year 1942 government inspected plants slaughtered approximately 6.2 million hogs, nearly 1.0 million cattle, about 667,000 calves and 825,000 sheep and lambs. Compared with previous years, hog slaughterings were slightly below 1941 but higher than any other year on record, and almost double the years immediately prior to the war. Cattle slaughterings were also a little below 1941, but higher than other recent years. Slaughterings of calves were a little below any year since 1936, while in the case of sheep and lambs, slaughterings compared favourably with any recent year. Although the number of hogs and cattle slaughtered in inspected plants in 1942 was a little lower than in 1941, higher average slaughter weights resulted in a greater total weight of dressed meats. In addition to these animals known to be killed and processed in inspected plants, there were a very considerable number of animals disposed of through farm or local slaughter. In recent years there are indications that a substantial portion of the cattle, hogs, sheep, lambs and calves produced in this country never reach the killing floors of inspected plants and there is reason to believe that in 1942 this proportion was even higher than normal for various reasons.

The total supply of dressed meats available from live stock slaughtered under inspection in 1942 was approximately 1.4 billion pounds. This compares with 1.3 billion pounds in 1941 and an average of a little under 1.0 billion pounds in the years from 1936 to 1940. Of the total 1942 production, nearly 550 million pounds or roughly one-third, was used to meet export requirements.

Consumption.—The consumer demand for meats varies as a result of the influence of many factors, such as the meat supply and price situation, occupations, racial extraction and income. According to the Dominion Bureau of Statistics' estimate, the "Average Canadian" in recent years has accounted for the disappearance of around 50 pounds of each of beef and pork, 10 pounds of veal and 5 pounds of mutton and lamb, or a total of 115 pounds of these meats. These figures as quoted are only approximate, and vary from year to year, but may be used as a guide. This indicates an average meat consumption of from 35 to 40 ounces per week. This is approximately equal to the reported average peacetime consumption in the United States, England and Germany, about 50 per cent above similar figures for France, Holland, Belgium and over 3 times greater than Italy. In most of these countries meat rationing is of course now in effect. The United States Office of War Information, in comparing rations with the present voluntary allowance of 40 ounces per week in that country, indicates an average weekly meat allotment of 31 ounces in England, 12½ ounces in Germany, 9 ounces in France, 10½ ounces in Holland, 5 ounces in Belgium and Italy.

With a high percentage of the population employed, working harder, and receiving better pay than during pre-war years, the demand in Canada for foodstuffs, as well as other commodities, has sharply increased. Although the total output of meats has been stepped up, Canada has been asked to supply Britain with increasing quantities of bacon, until exports are now double the amount shipped in the first year of the war, and about 4 times as large as in immediate pre-war years. In addition, the demands of the armed forces, granted some priority over civilian consumption, are on the increase, as well as certain other special wartime requirements. A situation has developed within the last few months, therefore, whereby civilian consumers found that they could not always obtain the quantity of meat they would like to buy, and for which they had the necessary purchasing power. In fact, due to imperfect distribution it is quite probable some were not able to satisfy immediate daily needs for meat, especially in larger cities. The fact that price ceilings were in effect prevented the ordinary automatic consumption brake in the form of rising prices, from operating. Fortunately, however, Canadian consumers have had available fairly liberal stocks of protein foods to substitute for meats, including cheese, poultry, fish and cereals. To date, therefore, there has probably been nothing worse than temporary inconvenience, and dietary studies tend to indicate that total supplies of protein foods are still considerably in excess of what is considered a safe minimum.

Summary.—Since the outbreak of the war, meat production in Canada has been at a high level. Domestic consumption and exports have also sharply increased, however, making total supplies short in relation to the potential demand at controlled prices. There has not been a real meat shortage in the sense that supplies are inadequate for dietary requirements, but consumers have not been able to buy all the meat they desired at all times and in all areas. In 1943 the total supply of meats will probably be even larger than the record 1942 output, but the quantity of bacon required for export is also considerably larger, and military and other special requirements have increased. Thus domestic consumers cannot expect larger supplies than were available in 1942. In order to ensure the largest possible production of meats and fats, the keynote of the 1943 agricultural programme in Canada calls for the feeding of larger numbers of live stock, and the production of larger quantities of feed grain as reserve feed stocks. This policy is based on the sound premise that meat is one of the vital food weapons of this war.

CONSUMPTION OF FOOD IN LARGE FAMILIES

Charlotte I. Johnston

Numerous studies in Canada and elsewhere have shown a relation between the consumption of food and the number of children in the family.

As children require more milk than adults, families containing a large number of children might be expected to use more milk on the average than would those with fewer children, but the contrary relation appears to hold. In 1935 a survey[1] of the consumption of milk and cheese was carried out in 3,130 urban, village and rural households of Quebec, Ontario and Alberta. Among them it was found that, although families consisting of adults used 0.72 of a pint of milk per person per day, the daily consumption of milk decreased, with one exception, from 0.78 of a pint per person to 0.68 of a pint, as the number of children increased from 1 to 6. A study[2] of the consumption of milk in Vancouver in 1936 showed that, while the average amount used per person per day increased from 0.62 of a pint by families of adults only to 0.76 of a pint by those containing 2 children, families of 3 children used 0.63 of a pint per person per day, and in families of 4 or more children daily consumption was only 0.51 of a pint per person. The average amount of milk used as a beverage by children decreased from 1.21 pints per day in one-child households to 0.60 of a pint in families of 4 or more children.

Cheese consumption by the families of the 1935 survey[3] above mentioned displayed even greater variation as the family increased in size. Households of 1 or 2 adults and no children used 10.2 pounds of cheese per person per year and consumption decreased to 3.7 pounds as the number of children rose to 7 or more.

Figures obtained from the same families, relating to the consumption of meat, fish and eggs, were combined with those of a survey of 2,060 families, conducted in the cities of St. John, Montreal and Vancouver in 1936. In households of 1 or 2 adults consumption of eggs per person declined steadily from 30 dozen to 12 dozen per year as the number of children in the household increased from 1 to 5 or more. Meat consumption went down from 133 pounds per person per year to about one-half that quantity, while fish consumption was reduced from 20 to 10 pounds per year as the number of children increased. A smaller consumption by very young children of these protein foods would be expected, but they are as necessary to children of 12 years and over as to adults, excepting the very active. Such reductions as those noted are therefore not to be explained by lower requirements.

From data obtained in the urban areas of Halifax and Sydney and in a number of towns and villages of Nova Scotia in 1941, it was found that as the number of children in the families increased from none to 5 or more, the consumption of apples per person decreased, with one exception, from 61 pounds to 39 pounds per year. In those groups the use of oranges per person decreased steadily from 34 to 15 pounds per person per year, and that of grapefruit was reduced from 12 pounds to 3 pounds in families of 4 or more children.

Yearly food expenditures according to the number of children per family in 1,135 wage-earner families of British origin having incomes from $450 to $2,500 were reported by the Dominion Bureau of Statistics in "Family Income and Expenditures in Canada 1937-1938", as follows:

Number of Children:	1	2	3	4	5
Expenditure per person:	$123	$104	$90	$84	$72

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[1] An Economic Study of the Consumption of Milk and Cream in Certain Urban and Rural Districts of Canada, by W. C. Hopper and G. P. Boucher, Economics Division, Department of Agriculture.

[2] An Economic Study of the Consumption of Milk and Cream in Vancouver, by Charlotte I. Johnston and W. C. Hopper, Economics Division, Department of Agriculture.

[3] An Economic Study of Cheese Consumption in Certain Urban and Rural Districts of Canada, by G. P. Boucher and W. C. Hopper, Economics Division, Department of Agriculture.

No figures are available showing the proportion of Canadian children in large families. In the 3,130 families of Quebec, Ontario and Alberta investigated in 1935, 49 per cent of the children under 17 years of age were in families containing 4 or more children of that age. Forty per cent of the children under 18 years of age of the families in the Nova Scotia survey referred to above were in families containing 4 or more children. In the Vancouver survey of 1936, it was found that 30 per cent of the children were in families of 4 or more. (In 1931 British Columbia had the smallest number of children per family of all provinces.)

A relation similar to that found in Canada between the milk consumed and number of children in the family was obtained from an inquiry covering 9,278 families in 59 cities of the United States in 1936; there was an increase in milk consumption per person in families of one child over families of adults only, but thereafter the average quantity used decreased with each additional child.

A recent publication[1] reports food expenditures in Middle Atlantic and North Central Village of United States in 1935-36. "The family's food bill reflects an increase in the numbers and ages of children much more clearly than do expenditures for such things as use of the automobile. . . A second child added to the household must have his own food, but he can share the room of his older brother and ride in the family car. The rise in outlays for food, however, with the addition of another family member to be fed does not correspond to the increasing food needs."

Figures for the average value per meal per food unit[2] show clearly the nutritional trend as more are added to the family. The food of a young husband and wife with an income of $500 to $999 averaged $0.119 a unit-meal; that of families with one child under 16 from $0.114 to $0.099; that of families witih 2 childlren under 16 from $0.099 to $0.083, and families with 3 or 4 children under 16 kept their food outlays per unit at an average of $0.073 per meal.

Savings in food costs may have been effected by more careful purchasing, by patronizing stores which did not give credit or extra services, by buying by grade and in large quantities, and by cooking foods at home. Less expensive but equally good food may have been bought. There is some reason to suppose that housewives with larger families and perhaps more experience would make these savings to a certain extent.

"Large families were likely to spend so little for food that their diets were below the safety line, nutritionally, when incomes were as limited as at the level $500–$999. Of the group with three or four children under 16, about three-fourths probably had diets that would be graded poor; fewer than 1 percent, diets that would be graded good, according to evidence provided by the money value of their food. Almost nine-tenths were in one of the two lower food-spending classes; that is, their weekly expenditures fell below $2.07 a unit, being less than $0.095 a unit-meal. About one-fourth were in the lowest of the five classes and only 11 percent were in the third, i.e., $2.08–$2.76. Even at this third level, diets of about one-third of the families would be graded poor; as few as 6 percent, good. . .

"Even when income was appreciably higher, $1,500–$1,999, almost one-fifth, 19 percent, of the families with three or four children under 16 were spending less than $0.095 a meal a unit."

The Mixed Committee of the League of Nations on Nutrition examined food consumption in many countries in the years before 1937. Examples of the effect of size of family on individual consumption in various countries are given in the final report. Figures from three income groups in Czecho-Slovakia showed that, with an increase in the number of children in each income group, the consumption per unit of the protective foods, butter, milk, eggs, cheese, fruit and vegetables, fell, while the use of the more filling bread and potatoes and cheap fat tended to increase. From a German inquiry it was seen that families with 4 children spent per consumption unit from 52 to 75 per cent less on meat, fish, eggs, fruit, vegetables and butter than did families with the same income but no children. The former families spent 26 to 37 per cent more on potatoes and white and black bread and 71 per cent more on margarine.

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[1] Family Spending and Saving as related to the age of wife and age and number of children, Bureau of Home Economics, U.S. Dept. of Agriculture.

[2] The food-expenditure unit takes account of sex, age, and activity of family members, being based upon the relation between the amount spent for food for a moderately active adult as compared with the amounts spent for other household members at the same dietary level.

The relation between decreasing consumption of food and increasing number of children in the family which has been found to exist is undoubtedly largely the result of decreased income per person. It is true that as a family increases its total income is likely to rise. The older children may become wage-earners, but their wages will be low. The earnings of the father tend to be higher as he becomes more experienced in his work, but they will not often increase sufficiently to maintain, upon division, the same allowance per person as was possible with the smaller family. Among families with high incomes, the proportion spent on food is so small that the cost for an additional member is unimportant, but few Canadian families are in that favourable position. From a sample count of the earnings of wage-earners in Canada, obtained from the 1941 census, it has been found that even in that year of relative prosperity, earnings of one-third of the urban heads of families did not exceed $999, and another one-third earned from $1,000 to $1,499.

Proper feeding of the children of the nation is necessary to enable them to develop physically and mentally to their greatest capacity and to produce a strong, vigorous and intelligent people. As wages are payment for work performed, there is no economic basis for linking the wages paid with the number of children the wage-earner has to support. Where the income of the parents is not sufficient to provide their children with adequate food, some other agency should do so. In Canada where we are so well equipped to produce food, there is no justification for malnutrition among children. An excellent way to ensure that each child of school age receives adequate food, is to have it supplied at school.

Milk, for instance, can be handled very easily at school. "Perhaps the most significant feature of the deterioration in nutrition to be found in large families among the lower income groups is the decline in the consumption of milk. Milk has been established by nutrition experts to be not only the most valuable element in the diet of children, but also an element for which no substitute has been found. A decline in the milk consumption is therefore practically synonymous with the deterioration of nutrition."[1] Although there may be a shortage of milk at the present time, there is no section of the population which should have greater priority in milk than the children. In Britain today, children in schools get one-third of a pint of milk per day for one-half penny and may get one-half a pint at home as well. Children under 5 years and pregnant and nursing mothers are allowed one pint of milk at a reduced rate or free. A scheme for distributing milk to children at one cent a glass is in operation in some cities of the United States.

The provision of food other than milk to children at school is not a new and untried project. Since 1906, various schemes have been in effect in Britain for providing meals at school and for giving them free to necessitous children. In Norway before the war, a breakfast consisting of milk, bread, butter and fruit or vegetables was supplied to school children. In Uruguay in 1937, school children were fed at six centres and other meals were provided for mothers and children in three centres in Montevideo. The United States has had a school lunch policy for several years by which many of the foods declared to be surplus were bought by the Surplus Marketing Administration (now Agricultural Marketing Administration) and distributed free to school children. More than 6,000,000 children participated in free school lunches in one month during 1942, receiving 36,500 tons of food.

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[1] Final Report of the Mixed Committee of the League of Nations on the Relation of Nutrition to Health, Agriculture and Economic Policy.

NOTES

On December 22, 1942, the Manitoba Electrification Inquiry Commission submitted its report in which it recommends extension of hydro-electric power to the majority of Manitoba's 58,686 farm homes. It recommends that the project be started immediately after the war with a minimum of 1,000 farms serviced the first year, and steadily increasing each year, and at least 25,000 at the end of ten years.

It is estimated that the capital cost for these 25,000 farms based on 1939 prices and the attainment of 80 per cent saturation of possible farm services would be $16,831,687.50. The per farm cost for lines and service installations will average $673.

The Commission indicates that if the minimum bill is set at $3.60 per month the farmer will find it economical to use this power to replace present costs such as coal oil, radio battery recharging and so forth. In addition it would relieve both the farmer and his wife of a great deal of the drudgery of the farm and home.

In general it is recommended that densely populated farm areas be serviced first. In the less densely settled areas and where it is practical and essential, the Commission suggests that farmers themselves should be organized into self-help bodies (or co-operative associations similar to those in the United States). Under such a set-up they would receive credit or cash for procuring materials and doing other work in order to reduce the cost of the lines and enable the farmers to build up a fund for the purchases of wiring materials and appliances.

In a report, issued February, 1942, on storage and irrigation works required to utilize fully Canada's share of international streams in Southern Alberta, the St. Mary and Milk Rivers Water Development Committee recommends that Canada should construct at an early date, as a post-war project the necessary irrigation works to protect by beneficial use its share of the St. Mary and Milk Rivers. It is estimated that the total cost required to fully and economically utilize Canada's share of the St. Mary and Milk Rivers for the irrigation of 345,000 acres of land on the basis of pre-war prices is estimated at $15,178,439 or $43.99 per acre, including construction, operation deficits, land preparation, and colonization costs over a 14-year period of development. An interesting recommendation by the Committee calls for the settlement and colonization of the irrigated lands. As a matter of fact the Committee put it in the following manner, "a policy, which combines to a large degree sound land-use practices with individual rehabilitation, can be readily accepted as further justification for the development of feasible irrigation projects."

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THE ECONOMIC SITUATION

Payrolls disbursed after the beginning of February 1943, as reported by the Dominion Bureau of Statistics were 5·8 per cent larger than those paid out at the beginning of January. Index numbers of payrolls and employment on a June 1, 1941 base show that there has been an increase of 18·5 per cent in the number of persons employed in eight leading industrial groups while the weekly earnings of employees in these groups were 39·5 per cent higher than at the basic date.

Between February 1942 and February 1943 there was an increase of 9·6 per cent in employment and 17·7 per cent in payrolls. The more rapid rise in payrolls is attributable to concentration of employment in heavy industries in which the rates of pay are above average and the payment of overtime general; the extension of cost of living bonuses which have been increased at one time or another; actual increases in wages based on experience gained and in some cases actual increases in rates of pay. The prevalence of strikes in key industries has been a disturbing factor affecting wage and price policies.

Physical Volume of Business.—The index of the physical volume of business was 227·3 in February of this year, compared with 225·8 in January and 192·9 in February 1942. Increased output in war plants was the chief factor in the advance in the first two months of 1943. Construction as reflected in both contracts awarded and building permits issued showed a good gain, the index rising from 95 in January to 141 in February. The Index of Industrial Production rose from 254·6 in January to 267·8 in February.

Retail Sales.—Retail sales in dollars averaged 9 per cent higher in February 1943 than in the same month of 1942. The increase in February of this year was largely attributable to increased sales of shoes. Sales in stores handling women's clothing advanced sharply while those in Western Canada handling men's clothing showed good increases. Such stores in eastern Canada either showed no increase in sales or very moderate advances. Stores handling food showed a 6 per cent increase in sales in February of this year.

Wholesale Prices.—Wholesale prices in Canada advanced from 96·9 in January to 97·5 in February and further increases were reflected in the weekly index of selected commodities for March which averaged higher than in the previous month. Wholesale prices of food advanced in March largely because of increased prices for wheat, steers and hogs. The Canadian Farm Products index has shown considerable strength in the early months of the year. The total index rose from 87·6 in January to 88·5 in February and the average of the weekly indexes for March was 92·4. The Field Products index advanced from 70·6 in January to 71·6 in February and in March the average for four weeks was 77·9. Higher prices for wheat, onions and potatoes accounted for the rise in March. The Animal Products index also showed a good gain. It was 116·9 in February but increased prices for cattle, hogs, hides and skins as well as poultry carried the weekly index to 118·2 in March.

Conditions in United States..—The index of wholesale prices of all commodities in the United States (1910-14=100) was 163 in January of this year.

MAY 22 1943
UNIVERSITY OF TORONTO

ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Living Costs and Production Indexes Computed by Dominion Bureau of Statistics: Index of Industrial Wage Rates Published by Department of Labour

Year	Wholesale Prices 1926=100				Retail Prices		Production and Wages 1926=100		
	All commodities (1)	Farm products (2)	Field products (3)	Animal products (4)	Urban Living Costs 1935-1939 =100 (5)	Farm Living Costs 1935-1939 =100 (6)	Physical volume of business (7)	Industrial production (7)	Industrial wages rates (8)
1913....	64·0	64·1	56·4	77·0	79·7	79·6	....	....	53·7
1914....	65·5	70·2	65·4	78·3	80·0	82·0	....	....	54·4
1915....	70·4	77·9	76·9	79·5	81·6	86·3	....	....	54·8
1916....	84·3	89·8	88·8	91·4	88·3	93·6	....	....	58·8
1917....	114·3	128·5	134·5	118·4	104·5	111·6	....	....	67·4
1918....	127·4	132·6	132·0	133·6	118·3	131·4	....	....	78·0
1919....	134·0	146·7	142·6	153·5	130·0	143·0	71·3	65·5	93·1
1920....	155·9	160·6	166·5	150·8	150·5	170·7	75·0	69·9	111·5
1921....	110·0	103·7	100·3	109·5	132·5	139·5	66·5	60·4	101·9
1922....	97·3	88·0	81·4	99·0	121·3	127·5	79·1	76·9	96·7
1923....	98·0	81·5	73·3	95·1	121·7	127·9	85·5	83·8	98·9
1924....	99·4	88·1	82·7	97·2	119·5	125·1	84·6	82·4	100·1
1925....	102·6	101·0	98·2	105·6	120·6	123·6	90·9	89·7	99·4
1926....	100·0	100·0	100·0	100·0	121·8	120·9	100·0	100·0	100·0
1927....	97·7	102·1	99·9	105·7	119·9	119·5	106·1	105·6	102·2
1928....	96·4	100·7	92·6	114·3	120·5	118·3	117·3	117·8	103·2
1929....	95·6	100·8	93·8	112·5	121·7	117·4	125·5	127·4	105·2
1930....	86·6	82·3	70·0	102·9	120·8	113·7	109·5	108·0	105·8
1931....	72·1	56·3	43·6	77·6	109·1	103·7	93·5	90·4	101·5
1932....	66·7	48·4	41·1	60·7	99·0	97·7	78·7	74·0	95·4
1933....	67·1	51·0	54·8	59·7	94·4	95·7	79·7	76·8	90·3
1934....	71·6	59·0	53·8	67·7	95·7	97·8	94·2	93·6	91·5
1935....	72·1	63·5	57·3	74·0	96·2	97·9	102·4	103·3	94·1
1936....	74·6	69·4	65·8	75·3	98·1	98·3	112·3	114·4	95·9
1937....	84·6	87·1	88·3	85·0	101·2	102·8	122·8	120·8	102·9
1938....	78·6	73·6	69·0	81·3	102·2	101·9	112·9	114·6	106·0
1939....	75·4	64·3	54·2	81·2	101·5	99·4	122·4	125·6	106·4
1940....	82·9	67·1	55·9	85·2	105·6	108·6	145·4	156·1	109·1
1941....	89·9	71·2	56·5	95·8	111·8	114·2	135·6	148·6	119·9
1942....	95·6	82·5	66·5	109·2	116·8	....	....	....	....
							1935-39=100		
1942									
Jan.....	94·1	79·2	62·8	106·7	115·4	....	192·3	216·5	....
Feb.....	94·6	80·4	64·4	107·3	115·7	....	192·9	216·3	....
Mar.....	95·0	80·8	64·6	107·9	115·9	....	189·3	207·7	....
April...	95·0	81·4	65·0	108·9	115·9	118·4	198·1	220·8	....
May....	95·2	80·2	65·5	104·8	116·1	....	195·5	217·3	....
June....	95·8	81·5	66·3	107·0	116·7	....	200·0	222·1	....
July....	96·1	81·1	67·7	103·5	117·9	....	203·7	229·4	....
Aug.....	95·5	81·3	68·4	103·0	117·7	....	205·7	232·5	....
Sept....	95·8	84·3	67·6	112·2	117·4	....	206·1	235·1	....
Oct.....	96·6	85·7	67·9	115·5	117·8	....	207·2	238·6	....
Nov	97·0	86·5	68·4	116·7	118·6	....	207·8	239·3	....
Dec	97·0	87·1	69·0	117·3	118·8	....	221·2	250·8	....
1943									
Jan.....	97·1	87·6	70·6	116·2	117·1	....	225·8	254·6	....
Feb	97·5	88·5	71·6	116·8	116·9	....	227·3	267·8	....
Mar.....	98·5	91·2	75·4	117·6	117·2		231·7	269·1	....

1. See Prices and Price Indexes 1913-1928, pp. 19-21, 270-289 and 1913-1939, p. 17.
2. Wholesale prices of Canadian products of farm origin only. See prices and Price Indexes 1913-1937 p. 52, and Monthly Mimeographs 1942-43.
3. Wholesale prices of grain, fruits and vegetables.
4. Wholesale prices of animals and animal Products.
5. See An Official Cost of Living Index for Canada, 1940.
6. Index numbers of Farm Family Living Costs 1913-38 and Farm Living Expenditures 1934 and Farm Family Living Costs mimeograph.
7. Monthly Review of Business Statistics, p. 8, and Monthly Indexes of the Physical Volume of Business in Canada, supplement to the monthly Review of Business Statistics, November, 1932. Yearly index numbers for 1942, subject to revision.
8. Department of Labour, *Labour Gazette,* January 1942.

The index of Industrial Production was 200 (1935-39=100) and the Cost of Living index 121. The February indexes of prices received by farmers (for which there is no comparable index available in Canada) were as follows: grains 138 as compared with 119 in February 1942; truck crops 301 and 199 respectively; meat animals 214 against 173 in February 1942; dairy products 179 and 147; chickens and eggs 170 compared with 135; for all groups (some of which have not been given in this review) the February 1943 index was 178 and that for February 1942 was 145.

In 1942 more than 12 per cent of the food raised for human consumption in the United States went for military and Lend-Lease purposes. In 1943 these requirements are expected to take from 20 to 25 per cent of the beef produced; 35 to 40 per cent of the pork; 25 to 30 per cent of the butter; 15 to 20 per cent of the cheese; 40 to 45 per cent of the condensed and evaporated milk; 40 to 60 per cent of the lard; 20 to 25 per cent of the edible fats and oils; 50 to 60 per cent of the fruits and vegetables; 10 to 15 per cent of the wheat and 15 to 20 per cent of the rice. This would be about 25 per cent of the total food production for human consumption.

Even with the attainment of higher production goals in 1943 shortages in some foods are possible. Transportation presents another problem. Thus civilians are likely to have less food available but it is believed that the rationing program and careful utilization and distribution of supplies will ensure enough food for a reasonably adequate civilian diet.

As in this country, employment has increased and earnings in the lower income groups have risen. This has of course increased the domestic demand for food products.

NOTES

The Canadian Political Science Association will hold its annual meeting at McMaster University, Hamilton, May 24 and 25. Among the agricultural problems to be discussed are Farm Income and Farm Labour.

Foreign Agriculture, published by the office of Foreign Agricultural Relations, United States Department of Agriculture, reports that:

"Since the outbreak of war agricultural production in continental Europe has declined, and imports of foodstuffs have been very much reduced. The effects of these developments upon consumption were only partly offset by some diversion of crop production from feed to food uses and greater reliance on foodstuffs of vegetable origin—which in regard to total energy obtained is a more economical utilization of the products of the soil. Civilian per capita consumption of food in continental Europe, 1941-42, fell to an average of 84 per cent of the pre-war level in total energy. Since large sectors of the populace, including most of the farm population, have scarcely been affected by the reduction in supplies, this average means that food consumption in other population groups has been drastically curtailed. There are also considerable differences as among individual countries and regions, and millions of people must subsist on as little as two-thirds or even one-half of the pre-war calories. On the other hand, the reductions that have occurred have not been great enough to make the food problem in the European Axis countries a decisive factor in the war. Germany's food position continues far better than it was in the last war.

As a result of changes in the consumption of individual products on the Continent, foodstuffs of animal origin supplied only 17 per cent of the total calories compared to 22 per cent before the war. The average supply of total protein in 1941-42 was about 8 per cent below pre-war; in animal protein alone the decline was probably as much as one-third. These declines and changes show the extent of Europe's wartime food problem and the magnitude of the effort that will be required to overcome it after the war."

ALBERTA DAIRY FARMERS' LABOUR PROBLEMS

H. L. Patterson and B. H. Kristjanson

This study was designed to supplement the information already available on the Canadian farm labour situation in wartime. A study of the national aspects of farm labour in Canada has recently been made.[1] While these investigations have been of a general nature it is the purpose of this paper to deal with the labour situation as it affects the farm unit, that is, the relation of farm labour to production. Moreover, the present analysis is confined to conditions on dairy farms in Alberta. Many dairy farmers have experienced a shortage of labour. Even when contract labour is available they are not able to utilize it to the extent that crop farmers do since the dairy requires continuous attention. Furthermore there is less opportunity of substituting machines for manpower on dairy farms. They are likely therefore to be affected most by any variations in supply of labour. Alberta's dairy-farm labour situation will be viewed from three standpoints:—

(1) The quantitative aspects and the differences in types of labour used, as well as the efficiency of this labour.
(2) The changes which have occurred in (1) over the period of the three years covered by this study.
(3) Seasonal variations in labour requirements.

The area covered by this study corresponds closely to the region designated as " Type of Farming Area Number 53 " by McArthur and Coke. They describe it as follows: "The more northerly areas of the province tend to include a larger proportion of coarse grains, oats and barley, in their cropping program, with the result that larger numbers of cattle and hogs are kept on farms to utilize the feeds. This type of farming is general throughout the Edmonton, Red Deer and Vermilion section of the province with hog production particularly important."[2] Cattle, wheat and hogs are the three main enterprises on these farms and each contributes approximately equal receipts to the farm business.

The data were obtained from cost-account records kept on farms producing for three types of markets: churning cream, inspected cream and wholemilk.[3] The number of co-operators in the first year of the study was 237 while 175 had completed records in 1941-42.[4] Most of the latter group furnished data for the entire three years.

The Man Equivalent Per Farm.—In order to appraise the amounts of the various types of labour, that is, day, month and year-labour, these were reduced to a single figure—the Man Equivalent. A full year's labour performed by one man was termed a Man Equivalent or, stated in another way, the Man Equivalent was determined by dividing the total number of months of labour per farm (including the operator's time) performed in one year, by 12. The producers of both inspected cream and wholemilk utilized approximately equal months of labour (table 1), while those producing churning cream required between 0·5 to 1 Man Equivalent less per farm. The total labour used as measured by the Man Equivalent per farm has shown some decline during the war years. Comparing the three types of producers those producing churning cream appear to have effected the greatest reductions in the amount of labour used between the first and the third year of the study.

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[1] Campbell, B. A., and Coke, J., "Farm Labour in Wartime." Mimeograph report, Economics Division, Dominion Department of Agriculture, July 1942.

[2] McArthur, I. S., Coke, J., "Types of Farming in Canada" Publication 653, p. 14, Economics Division, Dominion Department of Agriculture, September 1939.

[3] These records were kept at the farms under the joint supervision of the Economics Division, Marketing Service, Dominion Department of Agriculture; the Provincial Department of Agriculture; the Board of Public Utility Commissioners; and the Department of Politcal Economy, University of Alberta.

[4] Total number co-operating 195.

TABLE 1.—LABOUR USED ON ALBERTA DAIRY FARMS ACCORDING TO TYPE OF PRODUCER AND SIZE OF FARM 1939–42

—	Total acres	No. of farms	Man equivalent per farm (1)	Months hired per farm	Days of day-labour per farm	Months unpaid family labour per farm (2)	Live stock units per man (3)	Crop acres per man
CHURNING CREAM PRODUCERS—								
1939–40	Under 300.....	55	1·8	1·9	16	8·2	13·6	57·2
	300–399........	39	2·5	5·3	30	12·3	13·4	84·3
	400 and over..	45	3·1	6·5	57	17·3	17·2	117·6
1940–41	Under 300.....	46	1·8	1·2	20	7·8	14·6	69·4
	300–399........	30	2·0	2·5	25	8·6	18·8	103·5
	400 and over..	34	2·7	5·5	44	13·0	19·3	129·1
1941–42	Under 300.....	37	1·8	0·7	11	8·1	(4)	(4)
	300–399........	23	1·9	1·6	29	8·1	(4)	(4)
	400 and over..	31	2·6	5·4	25	13·0	(4)	(4)
INSPECTED CREAM PRODUCERS—								
1939–40	Under 300.....	12	2·2	6·9	41	7·9	14·2	46·6
	300–399........	16	3·1	10·2	26	15·3	12·9	71·6
	400 and over..	23	3·8	11·0	58	22·0	17·8	114·2
1940–41	Under 300.....	10	2·1	5·4	50	6·6	16·2	51·1
	300–399........	19	2·8	11·0	49	12·9	16·8	81·6
	400 and over..	20	3·9	11·4	93	20·3	18·5	112·3
1941–42	Under 300.....	12	2·2	6·3	30	7·5	(4)	(4)
	300–399........	14	2·7	6·8	56	11·2	(4)	(4)
	400 and over..	15	3·6	7·2	46	22·6	(4)	(4)
WHOLEMILK PRODUCERS—								
1939–40	Under 300.....	25	2·3	11·5	21	4·4	14·9	50·2
	300–399........	15	2·5	14·4	16	4·0	15·5	77·1
	400 and over..	7	4·0	33·8	42	2·1	20·0	126·6
1940–41	Under 300.....	23	2·2	7·7	6	6·9	15·0	53·8
	300–399........	11	2·6	8·6	14	10·4	13·5	77·4
	400 and over..	11	3·5	23·7	41	5·8	19·9	123·5
1941–42	Under 300.....	21	1·9	4·1	24	6·8	(4)	(4)
	300–399........	13	2·4	8·7	45	7·0	(4)	(4)
	400 and over..	9	3·7	25·2	40	5·7	(4)	(4)

(1) Includes operator's time.
(2) Other than operator.
(3) Horses not included.
(4) Not available at present.

Hired Labour.—The number of months of hired labour per farm varied greatly between the three types of producers. Farmers producing for the churning cream market hired only a small fraction of the amount hired by the farmers producing for the wholemilk market (table 1). There was a pronounced trend downward in the quantity of labour hired on a monthly basis in all three groups between the first and last years of the study. This reduction was effected mainly during 1940-41 in the churning cream and wholemilk groups while the inspected cream producers effected their reduction largely during 1941-42. Fluctuations in the amounts of day-labour used are discussed below.

Unpaid Family Labour.[1]—In comparing the third year with the first the churning cream and the inspected cream producers used less family labour while the wholemilk producers employed more of this type of labour (table 1).

This shift from less hired to more family labour in the wholemilk group is to be explained by the increased employment of women in the dairy. Two factors were responsible—one, the growing difficulty in obtaining competent male help, and second, the introduction of a large number of milking machines making the work less strenuous to women workers.[2] It is interesting to note in Figure 1 that there was a consistent increase in the amount of unpaid family labour on the farms in the inspected cream group with the increase in total acres per farm. It should also be noted that the proportion of unpaid family labour to total labour increases as the size of farm is increased.

Labour Efficiency.—The most striking feature of table 1 is the extent to which it indicates the effect of the size of farm on labour efficiency. It should be noted that the farms under 300 acres represent those farms which are less than a half-section in size (with a marked central tendency to the quarter-section) while the majority of the farms in the 300 to 399 acre group are half-section farms. While the data concerning the production per man were not available for the last year of the study there was ample evidence in the data covering the first two years to show that as the size of business increasd beyond 399 acres per farm there was a marked increase in labour efficiency. This increase was indicated by the upward trend in both the number of live stock units handled per man and the number of crop acres per man.[3] With the exception of the wholemilk group there has been a general tendency toward greater efficiency in the use of labour within each size group. This is to be explained almost entirely by the increased work performed per man. It is quite probable that this increase in the amount of labour performed per worker resulted in even greater efficiency during 1941-42. Table 1 reveals a tendency for the effect

TABLE 2.—EFFECT OF SIZE OF FARM MEASURED BY ADJUSTED ACRES, EDMONTON DISTRICT FARMS, 1940-41

Adjusted acres per farm (1)	No. of farms	Average labour earnings	Man equivalent per farm	Average adjusted acres
45 WHOLEMILK FARMS—		$		
Less than 200	25	864	2·2	134
200 or more	20	1,819	3·2	401
49 INSPECTED CREAM FARMS—				
Less than 300	26	736	2·5	215
300 or more	23	813	3·7	463
110 CHURNING CREAM AND CHEESE FARMS—				
Less than 120	15	336	1·5	84
120 to 219	46	539	1·9	175
220 to 319	26	785	2·2	271
320 or more	23	1,009	2·9	448

(1) The adjusted acreage is estimated by adding approximately one-third the number of acres of rough pasture and one-tenth the number of acres of bush pastured to the crop acreage. This has the effect of giving a better indication of the size of business, especially on live stock farms.

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[1] Family labour means the equivalent of a grown man's time on work performed by members of the family without salary excluding the operator.

[2] Generally there has been a larger amount of available female help on the wholemilk farms which was not being utilized. During the period in which wages paid to male workers were relatively low, female labour was used to a lesser extent on wholemilk farms than on farms of either of the other two groups.

[1] One animal unit is equivalent to: 5 hogs raised to market weight, or 7 sheep kept 1 year; or 14 lambs raised to market weight, or 100 hens kept 1 year.

of the reduction in the number of workers per farm to be offset by the greater production per man. In other words, farmers in this region are maintaining their production in spite of the reductions in labour but obviously there are limits to this type of step-up in efficiency.

To emphasize still further that available labour could be used relatively efficiently on the larger farms table 2 is presented. The effect of an increased scale of operations on labour efficiency was obvious. In the wholemilk group the average number of adjusted acres per farm was trebled with an addition of one Man Equivalent to the labour supply. While this trend in the increased number of adjusted acres held true in the inspected cream group it was not perhaps as pronounced as in the other two groups. In the churning group this relationship between size of farm and labour efficiency was quite pronounced as it may be observed that the number of adjusted acres per farm increased five times with an addition of only 1·4 Man Equivalent.

TABLE 3.—THE EFFECT OF LABOUR EFFICIENCY IN THE DAIRY AS MEASURED BY HOURS OF CHORES PER POUND OF BUTTERFAT PRODUCED, EDMONTON DISTRICT FARMS 1940–41

Hours chores required to produce one pound butterfat	No. of farms	Average labour earnings	Cost per pound butterfat	Average hours per pound butterfat	Cash receipts per man	Value charged per hour of labour
		$	Cts.		$	Cts.
45 WHOLEMILK FARMS—						
Less than 0·9 hours	27	1,610	44·5	0·7	1,868	18·8
0·9 hours or more	18	805	53·5	1·0	1,431	21·1
Mean	45	1,288	47·1	0·77	1,715	19·8
49 INSPECTED CREAM FARMS—						
Less than 1 hour	25	1,122	34·3	0·8	1,517	18·5
1 hour or more	24	408	41·5	1·2	1,340	17·4
Mean	49	771	37·3	0·95	1,424	17·9
110 CHURNING CREAM AND CHEESE FARMS—						
Less than 0·85 hours	28	952	24·6	0·7	1,216	16·9
0·86 to 1·14 hours	37	697	30·0	1·0	1,213	16·9
1·15 to 1·45 hours	26	569	35·8	1·3	947	17·5
1·46 or more	19	328	42·2	1·6	850	17·2
Mean	110	668	31·7	1·09	1,087	17·1

The effect of the increase in the efficiency of the use of labour is shown in table 3. Here both the wholemilk and inspected cream groups showed a very marked increase in labour earnings as the efficiency of the labour was increased. With a 30 per cent increase of efficiency in the wholemilk group the labour earnings were doubled. Because the measure of efficiency used applies only to the dairy which is relatively a smaller part of the business on these farms, this relationship was not as pronounced on the farms producing churning cream. The trend, nevertheless, was maintained.

Seasonal Labour.—In all three size groups the hired labour requirements were highest during the months of August, September and October (figure 1). The greater variation occurring in the group of farms of 400 acres or more is accounted for by larger acreages in grain crops on these farms. The unpaid family labour used remained practically constant throughout the entire year and is therefore by no means to be considered seasonal labour. The variations which do occur were in the amounts of labour hired.

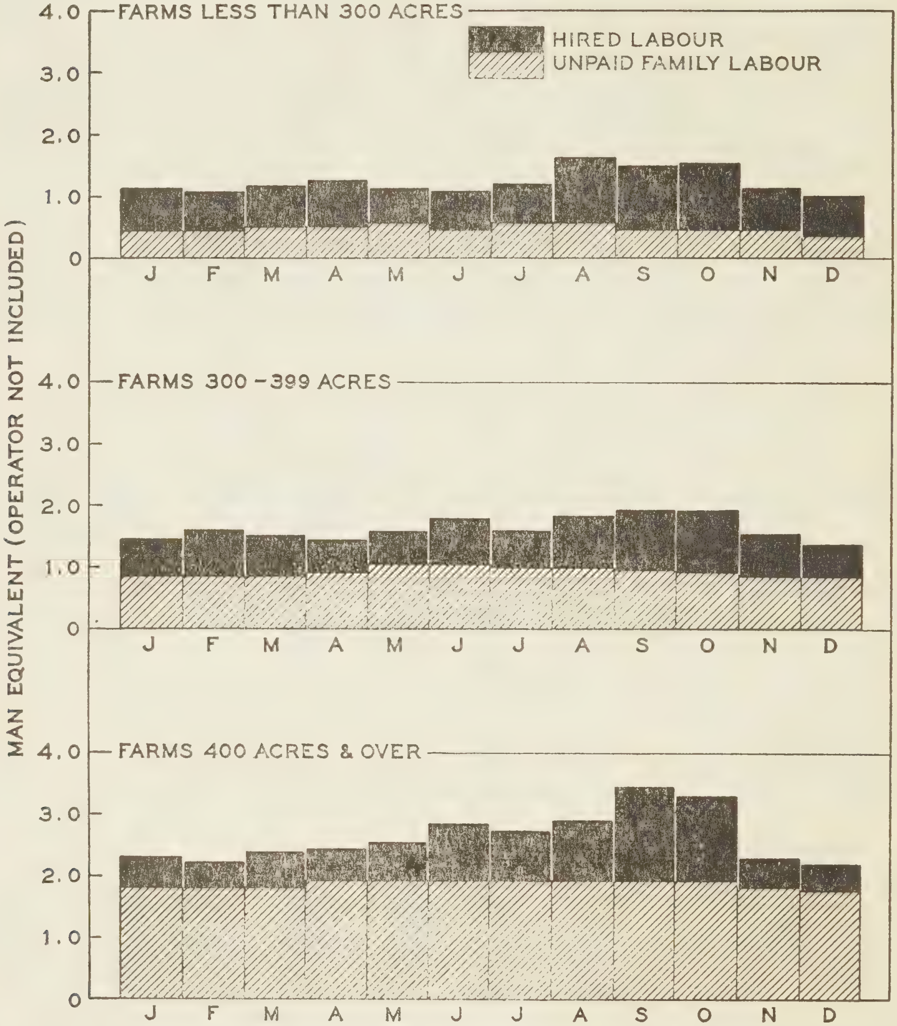

Fig. 1. Seasonal Distribution of Labour

The Demography Branch of the Dominion Bureau of Statistics has issued a release on farm population in 1941. The total population of Canada as reported in the 1941 census was 11,505,898. Of this number 3,289,140 live on farms or 27·5 per cent. Comparable figures for the 1931 census are as follows: total population 10,376,788, living on farms 3,163,268 or 31·7 per cent. The population living on farms thus decreased 4·2 per cent in the decade. In 1941, 976,411 persons on farms were under 14 years of age.

The Department of Labour has announced a Co-operative Farm Training Scheme in the Province of Alberta to assist in over-coming the farm labour shortage. The Dominion Government will provide financial assistance for the training of boys and girls for summer work on farms. The courses will start at the close of the school year in June.

COSTS AND RETURNS IN THE PRODUCTION OF APPLES IN THE ANNAPOLIS VALLEY—Part II

B. A. Campbell

In 1941 a study of farm organization and the cost of producing apples was conducted in the Annapolis Valley of Nova Scotia. Partial results of this study have previously appeared in the December 1941 and April 1942 issues of the *Economic Annalist.*

The first of these articles dealt with some phases of the farm organization, the financial standing of growers and with the cost of producing apples on 97 farms in the Annapolis Valley in 1939 and 1940. The effects of the size of orchard and the yield per tree were discussed in this first article as two factors influencing the variations in the cost of producing apples on individual farms. The second article dealt with changes in farm organization between 1929-31 and 1939-40. This article presents an analysis of the effects of certain other factors.

Diversity of the Farm Enterprise.—In 1940 as the percentage of time devoted to apples on individual farms in Nova Scotia increased, the average labour earnings per farm decreased (table 1).

Table 1.—Percentage of Time Spent on Apples Related to Cost of Production and Labour Income

Time Devoted to Apples	Number of Records	Cost per Barrel	Cost per Acre	Yield per Acre	Average Labour Income	Average Labour Earnings
%	No.	$	$	bbl.	$	$
0–20	6	2·02	93·57	46·1	634	1,245
21–40	38	2·53	74·37	31·9	53	575
41–60	35	2·18	74·24	34·1	−325	164
61–80	15	2·56	75·60	29·5	−591	−112
81–100	3	3·30	71·66	21·7	−638	−146
Total	97	2·31	75·06	32·5	−168	340

Those farmers who devoted less than 40 per cent of their time to apples in 1940 showed a plus labour income while those who devoted between 60-100 per cent of their time to apples showed on the average a minus labour income. While the poor apple crop in 1940 largely accounted for this trend, many growers were increasing their receipts from other enterprises in order to offset anticipated lower returns from apples.

Table 2.—Relation of Productive Man Work Units on Enterprises Other Than Apples to Labour Earnings

Productive Man Work Units per Farm	Number of Records	P.W.M.U. on other Enterprises		Labour Earnings from other Sources
	Number	Total	Average	$
1–200	27	3,512·6	130·1	−6
201–400	36	10,004·6	277·9	232
401 and over	34	21,927·0	644·9	914
Total	97	35,444·2	365·4	405

As the size of these other enterprises increased, the labour earnings per farm from such sources also increased. Productive man work units[1] were used in determining the size of these other enterprises and in table 2 it is shown that for those 27 farms having less than 200 productive man work units per farm the labour earnings from sources other than apples averaged minus $6 per farm. On the 34 farms averaging more than 400 man work units per farm the labour earnings from other sources, averaged $914 per farm.

Increasing yields usually result in increased labour earnings per farm. The crop index of individual farms for all crops grown in 1940 other than apples, was tabulated for 95[2] growers from whom records were obtained. Thirty-four of these growers had crop indexes less than 90 (table 3) and the average earnings from sources other than apples averaged $277 per farm.

For those 30 growers whose crop index was more than 110, the average labour earnings were $516 per farm. It may be observed that as the yields increased, the value of fertilizer per acre on crops other than apples also increased.

TABLE 3.—CROP INDEX RELATED TO LABOUR EARNINGS, OTHER THAN APPLES AND TO FERTILIZERS APPLIED ON OTHER CROPS

Crop Index	Number of Records	Average Labour Earning other than Apples	Value of Fertilizer per Acre on Crops other than Apples
		$	$
Under 90	34	277	1·87
91–110	31	423	2·73
111 and over	30	516	2·84
Average	95[2]	400	2·51

In addition to information on the farm organization and the effect of certain factors on the cost of production and returns, data were also obtained on the cost of living and indebtedness on Annapolis Valley Farms in 1940.

Cost of Living.—Information relating to the actual cost of living was obtained from 83 of the 97 farms visited. The average cash living cost was $887 per farm in 1940 while perquisites or living derived from the farm totalled $516 (table 4).

TABLE 4.—AVERAGE COST OF LIVING ON 83 FARMS IN ANNAPOLIS VALLEY, OF NOVA SCOTIA, 1940

—	Total Cost			Percentage		
	Cash Cost	Perquisites	Total	Cash Costs	Perquisites	Total
	$	$	$	%	%	%
Food	313	206	519	35·3	39·9	37·0
Clothing	112	....	112	12·6	....	8·0
House—rent	....	224	224	....	43·4	16·0
—new furnishings	24	....	24	2·7	....	1·7
—fuel and light	53	86	139	6·0	16·7	9·9
Health	87	....	87	9·8	....	6·2
Education	28	....	28	3·2	....	2·0
Personal—auto	40	....	40	4·5	....	2·8
—life insurance	83	....	83	9·3	....	5·9
—maid	41	....	41	4·6	....	2·9
—other	106	....	106	12·0	....	7·6
Total	887	516	1,403	100·0	100·0	100·0

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[1] P.M.W.U.—Productive Man Work Units. Average amount of man labour required to take care of an acre of the various kinds of crops or one unit of different classes of live stock.

[2] 2 of the 97 farms had no crops other than apples.

Average number in family—adults 2·2, children 1·7, hired help ·6, total number of persons per farm 4·5.

Expenditure for food represented 35·3 per cent of the cash cost, clothing averaged 12·6 per cent, health 9·8 per cent and insurance 9·3 per cent while other items were of relatively less importance.

The allowance for house rent was considered a non-cash cost and averaged $224 per farm; food obtained from farm, including milk, eggs and meat, averaged $206. Wood obtained from the apple orchard and from the wood lot for fuel averaged $86 per farm.

Indebtedness.—Seventy-six of the 97 farms reported some outstanding obligations, either short or long term loans (table 5). The average debt for these 76 farms at the end of April 1941 was $6,233 compared with total average real estate value of $13,781.

The total indebtedness on the 97 farms was $473,711 or 37·1 per cent of total real estate value of $1,276,316. Seventy-nine per cent of the growers had mortgages on their farms averaging $5,473. Of these, 38 were private mortgages averaging $4,581, twenty-one were with loan companies averaging $6,587 and the remaining 18 were with the Canadian Farm Loan and Soldier Settlement Boards.

Many farmers used short term credit, obtained from merchants and other sources to provide themselves with operating capital. With a poor apple crop in 1940, many growers were unable to pay off these loans and in quite a few instances, the short term debts were as great or greater than their long term loans. Forty-seven growers reported short term debts and the average for such outstanding accounts was $2,276.

TABLE 5.—INDEBTEDNESS ON 97 ORCHARD FARMS IN THE ANNAPOLIS VALLEY, APRIL 30, 1941

Source of Credit	Amount	Percentage	Number reporting debt	Average of number reporting	Average all farms
	$	%	No.	$	$
LONG TERM DEBTS—					
Canadian Farm Loan Board	49,240	13·4	16	3,078	508
Soldiers Settlement Board	5,093	1·4	2	2,547	53
Loan Companies	138,325	37·7	21	6,587	1,426
Private	174,065	47·5	38	4,581	1,794
Total	366,723	100·0	67	5,473	3,781
SHORT TERM DEBTS—					
Banks	31,315	29·3	32	979	323
Finance Companies	1,450	1·4	2	725	15
Merchants	50,051	46·8	26	1,925	516
Taxes	1,560	1·4	8	195	16
Private Individuals	20,568	19·2	10	2,057	212
Insurance Policies	2,044	1·9	3	681	21
Total	106,988	100·0	47	2,276	1,103
Total all Loans	473,711		76	6,233	4,884
Value of real estate	1,276,316			13,781	13,158

AGRICULTURAL FOOD

The members of the newly appointed Board are Dr. G. S. H. Barton, Deputy Minister of Agriculture, Chairman; Mr. A. M. Shaw, Director, Marketing Service; Mr. R. S. Hamer, Director Production Service; Dr. J. F. Booth, Associate Director Marketing Service; Mr. J. F. Singleton, Associate Director Marketing Service; Mr. L. W. Pearsall, Secretary, Manager of the Bacon Board; Dr. A. E. Richards, Economics Division, will act as Secretary of the Board.

CANADIAN BACON IN WARTIME

H. K. Leckie

At the outbreak of World War II it was quickly recognized that Canada's chief contribution to the meat supply of the United Kingdom would be in the form of pork products, chiefly cured Wiltshire bacon and cuts. This was a logical and natural development, marking the culmination of patient and persistent efforts extending over a number of years to develop the swine industry of this country on a sound basis. A primary objective of this policy was the production in larger volume of superior-type bacon hogs capable of yielding the desirable weight and quality of Wiltshire sides sought for the British market. This, coupled with the fact that hog production is flexible and adapted to relatively rapid adjustment of volume of output enabled overseas shipments to be sharply increased almost as soon as the United Kingdom entered the war.

Britain's Bacon Imports.—In the years from 1935 to 1939 total imports of bacon and hams into the United Kingdom from all sources amounted to around 850 million pounds annually of which about 25 per cent was supplied by Empire countries, principally Canada. Of the remaining 75 per cent, Denmark furnished nearly two-thirds while the balance was obtained from the United States, the Netherlands, Poland, Sweden and smaller amounts from a number of other European countries. During this same period British agricultural policies had been designed to increase the pig population at home and a considerable portion of her expanding requirements were being met from domestic production. Within a few months after the outbreak of war, however, the Nazi forces had overrun a large part of Europe thus cutting off continental sources of food supply from the United Kingdom. At the same time, a shortage of feedstuffs for live stock in Britain forced a curtailment in the numbers of pigs and poultry being raised, in order to make feedstuffs available to maintain dairy production at essential levels. This resulted in increasing demands on Canada for bacon in order to maintain desirable rations for the British people. In the third year of the war the British ministry of Food looked to Canada to supply 75 per cent of the bacon required to maintain the ration at 4 ounces per person per week. In the fourth year, Canada's responsibility was increased to 80 per cent of the total quantity needed.

Canada's Overseas Exports.—A comparison of Canada's bacon export trade with the United Kingdom during the First and Second World Wars shows some interesting developments. In the years 1914 to 1918, inclusive, Canada shipped to the United Kingdom a total of some 720 million pounds of bacon and hams, reaching a peak of 217 million pounds in 1917. However, during the latter year alone, 130 million pounds of pork was imported into Canada from the United States, part of which was cured and re-exported, with the remainder consumed domestically. Thus, during the 1914-18 period, bacon exports exceeded imports of pork by only 468 million pounds or very considerably less than either shipments totalling 600 million pounds during the third year of World War II, or the contract for 675 million pounds undertaken in the present or fourth year of the war. Except for a brief period early in 1940, recent imports of pork from the United States have been insignificant.

In World War I there was no specific agency established to superintend the delivery of export bacon overseas. Moreover, although considerable pioneer work had already laid the foundations for future progress, Canadian swine producers in general had not begun to concentrate efforts towards the development of a true bacon-type hog. As a result, the quality of the product supplied to the United Kingdom during that period was not conducive to the building up of Canadian bacon trade after the war. In the years from 1919 to 1925 exports hovered around 100 million pounds annually, after which point quantities going forward progressively declined until 1931 in which year the total had shrunk to only 11 million pounds. In the meantime, however, swine grading had been established and other policies instituted which were designed to improve the hog and bacon industry.

Following the Imperial Economic Conference at Ottawa in 1932, Canada received the benefit of what then appeared to be a substantial quota in the British market. As a result of this stimulus bacon shipments from 1932 onwards showed some increase, although not at any time did they reach the maximum of 280 million pounds permitted under the Empire Trade Agreements. The drought which affected large grain-growing areas of Western Canada no doubt was a limiting factor. However the greater stability of hog markets after 1935 culminating in 1938 in the highest prices since the beginning of the depression, led to a sharp upswing in production manifest in a record 1939 spring pig crop. When war was declared this crop was nearly ready for market, and during the fall of 1939 new marketing records were established.

Bacon Agreements.—Meanwhile negotiations had been proceeding between the governments of Canada and the United Kingdom for the purchase by the British Ministry of Food of large quantities of Canadian Wiltshire bacon during the first year of the war. On December 4th it was announced that a contract calling for the shipment of 5,600,000 pounds of bacon per week had been signed. Within a few days it was further announced that a body known as the Canadian Bacon Board was being established, together with an Advisory Committee. Various powers and responsibilities with respect to the hog and bacon industry were to be vested in this Board for the purpose of implementing the terms of the bacon agreements.[1]

The Bacon Board formally assumed control of bacon exports commencing January 20, 1940.

A more detailed account of the Board's activities during the first, second and third bacon agreements will be found in earlier articles.[2] It may be of interest however, to briefly review a few of the highlights of operations during the first three years of the war.

During the period of the first or 1939-40 agreement, deliveries of Canadian bacon to the British Ministry of Food totalled 331·5 million pounds with a seaboard value of $60·8 millions. In addition 2·3 million pounds of frozen kidneys, livers and tongues were shipped, valued at $234,378. Due to the rapid increase in hog marketings, production was more than ample to meet all export and domestic requirements, and consumers were in fact urged to step up pork consumption.

The second or 1940-41 agreement called for the shipment of even larger quantities. By the middle of this contract period, the curtailment of Britain's European sources of supply began to be revealed in larger demands on Canada, with requests for a speeding up of deliveries. Completed three weeks ahead of schedule, shipments for the year included 425·6 million pounds of bacon valued at $70 millions, 12·7 million pounds of frozen offals valued at $1·3 millions and 4·4 million pounds of lard valued at $375,000. By this time domestic consumption in Canada had increased considerably, and with the first rapid upswing in the hog production cycle completed, it was clear that demand was rapidly overtaking supply. However marketings in the fall of 1941 again set new records, enabling a good start to be made on the even larger contract for 600 million pounds undertaken for the third year of the war.

Shipments under the 1941-42 agreement were completed somewhat behind schedule due to declining hog marketings in the summer of 1942 following a poor crop in Eastern Canada in 1941 and less attractive hog prices during the crucial breeding period. However, an impressive volume of pork products was handled, including 600·0 million pounds of bacon and hams valued at $118·8 million;

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[1] For a fuller description of the powers of the Board see article entitled "Marketing The 1940 Pig Crop" in the Economic Annalist, Oct. 1940, p. 67.

[2] See Economic Annalist for October, 1940; February, 1941; October, 1941; October, 1942.

10·6 million pounds of pork offals valued at \$1·1 million; 6·0 million pounds of canned pork valued at \$1·6 million and 452,800 bundles of hog casings valued at \$568,000.

When the unprecedented contract undertaken for 1942-43 calling for shipment of 675 million pounds of bacon and cuts is completed, total shipments in the present war will have exceeded 2 billion pounds valued at over \$396 millions, or the product of close to 17 million hogs. In addition, very considerable quantities of other pork products have been supplied, including pork offals, canned pork, lard and casings. These accomplishments are indeed substantial particularly when viewed in comparison with World War I experience, or even in the peacetime years intervening between the two wars. Although the prime necessity for making available the increased quantities of bacon required by the United Kingdom has been clearly realized, nevertheless efforts have been made from the outset of the present war to prevent a repetition of the most unfortunate 1914-18 experience and its undesirable repercussions in post-war bacon trade. Through its operating policies the Bacon Board has sought to keep export bacon quality at high levels. Some of the more important steps taken in this regard may be summarized as follows:—

Payment on a Graded Basis.—Although the British Ministry of Food pays for bacon on the basis of one flat price for all Grade A bacon with a correspondingly lower price for B grade, the Bacon Board makes settlement with packers for Wiltshires on a graduated basis depending on (*a*) the grade—whether A or B, (*b*) the weight—whether sizeable (55 to 65 pounds) or lighter or heavier than sizeable, and (*c*) the selection, whether No. 1 (leanest), No. 2 (lean) or No. 4 (prime). Thus the most desirable side, which is one of Grade A quality, of sizeable weight and of No. 1 selection, commands the highest return, with other classes in proportion. This practice tends to constantly keep the value of high quality to the forefront, as the best sides provide the highest returns.

Seaboard Inspection.—The quality of bacon loaded at seaboard is constantly checked by government officials on a systematic basis. Bacon is inspected for workmanship under 16 individual points covering butchering, marking and baling, and, with respect to quality, as to condition, colour, grading and selection. A score card is used to indicate any shortcomings, with both the plants concerned and the Dominion Department of Agriculture receiving regular reports, thus enabling the appropriate remedial measures to be carried out.

Standardized Practice.—To study ways and means of improving methods of handling export bacon, the Bacon Board has set up a Technical Committee representing various interests concerned. This body has had the benefit of valuable research carried on by other governmental agencies notably the National Research Council and the Bacteriology Division of the Experimental Farms Service. On the recommendations of this Committee, a standardized cure was adopted for use in all exporting plants on all export Wiltshire sides as of June 1, 1941. This has enabled better control of the important factor of curing than formerly, when the various exporting plants followed their own particular method. The Technical Committee has also been instrumental in setting up standards for all export processes and under the authority of the Department of Agriculture and the Bacon Board has issued a brochure entitled "Canadian Standards for the Preparation of Wiltshire Sides and Cuts". This details practices either required or approved in the processing and packing of export bacon, and is thus conducive to the uniformity and efficiency requisite for the overseas bacon trade.

Claims and Penalties.—Earlier in the war a Claims Tribunal was set up in the United Kingdom for the purpose of assessing claims against faulty product. In April, 1942, tribunals were established in Canadian seaports instead, so that appropriate assessments are made promptly against the plant or plants concerned. In extreme cases the shipment may be refused altogether. However, total claims are insignificant relative to the volume shipped.

To reduce to a minimum the incorrect classification of export sides, such as the shipment of B grade product as A grade, or No. 2 or No. 3 selections as No. 1, severe penalties are levied against packers for offences of this nature. A deduction of 60 cents per 100 pounds is assessed against the percentage of product improperly tagged, and the penalty is doubled if there is a re-occurrence of the offence within 60 days. Shipping weights are also carefully checked at seaboard.

The foregoing represent some of the most important measures which have been instituted to standardize and improve the quality of "Canada" bacon which eventually appears on breakfast tables throughout the United Kingdom. There is still an important task for the producer in breeding, feeding and marketing bacon hogs of the type, weight and quality required to furnish large quantities of Grade A, No. 1 sizeable Wiltshire sides. The trend to heavier market weights which has occurred in recent months has now apparently reached a point where quantity must be carefully balanced against quality. Heavier and fatter carcasses mean a large proportion of oversizeable sides of No. 2 and No. 3 fat selection. Naturally British consumers do not wish to purchase a high proportion of fat with the four ounces of bacon they are allowed each week.

The experience gained in the enormous development of Canadian overseas bacon trade during this war, will no doubt serve in good stead in whatever situations may develop in the post-war world. A proven reputation to supply large quantities of desirable bacon would be a valuable sales asset when competition for the British bacon market reappears. The ability to supply a superior product at a competitive price rather than mere sentimental appeal, is likely to remain a prime factor in the marketing of any commodity, agricultural or otherwise.

THE MARKETING OF DAIRY PRODUCTS IN THE ONTARIO AND QUEBEC GOLD BELTS

PART 1.

E. P. Reid and W. R. Peters[1]

Although a provincial boundary divides the area in which the survey of marketing of farm products here reported on was made, there is a measure of unity industrially and agriculturally throughout the region. The study concerns the marketing of farm products at the main urban centres in and adjacent to the gold-mining region of northern Quebec and Ontario. The surrounding farm country is part of the Clay Belt which extends through the territory both north and south of the Gold Belt. There were a dozen or more towns surveyed, but as several are adjacent to each other, they group conveniently into seven "markets". These are Timmins, Kirkland Lake, Iroquois Falls and Cochrane in Ontario; Rouyn-Noranda, Val d'Or, and LaSarre-Amos in Quebec. The first two named for each province are the mining camps, and in each case comprise the vast bulk of the population. The other three markets are in the farming areas adjacent to the mining sections. Iroquois Falls is more important as a paper-mill town than as an agricultural centre.

Local farming areas have been taken to be Temiskaming and Cochrane districts in Ontario, and Abitibi and Temiscamingue counties in Quebec. The production area thus designated is surrounded on all sides by unexploited and unexploitable land, and there is therefore a natural as well as an administrative distinction between the "North" as designated in this study and the older farming areas of both provinces. Although it has been kept in mind that there is a basic unity of interest between Ontario and Quebec portions of the area, nevertheless for convenience of field work the survey has been kept distinct as between the two provinces. Thus the Ontario data pertains to the twelve months, July 1940 to June 1942. The Quebec figures show marketings during the ensuing year, July 1941 to June 1942.

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[1] W. R. Peters is a member of the staff of the Ontario Department of Agriculture with headquarters at New Liskeard where he acts as marketing promotor.

DAIRY PRODUCTS MARKETED IN NORTHERN ONTARIO AND QUEBEC GOLD BELT SHOWING LOCALLY GROWN AND SHIPPED-IN PROPORTIONS

MARKETED		4 NORTHERN ONTARIO MARKETS JULY 1940–JUNE 1941			3 NORTHERN QUEBEC MARKETS JULY 1941–JUNE 1942		
Produced		Locally		Elsewhere	Locally		Elsewhere
			%			%	
Fluid milk	lb.	18,141,633	100·0	....	5,540,833	80·1	1,373,477
	$	523,351	100·0	....	186,271	82·9	38,347
Cream as B.F.	lb.	62,583	53·0	55,448	46,895	82·6	9,909
	$	27,590	53·5	23,926	18,626	81·2	4,310
Butter	lb.	493,224	15·4	2,705,861	311,172	17·4	1,472,550
	$	135,625	14·2	818,438	104,959	16·0	550,593
Cheese	lb.	31,933	5·2	586,169	480	0·2	219,874
	$	5,280	4·2	121,015	109	0·2	57,232
Processed milk	lb.	....	nil	3,141,264	....	nil	2,218,889
	$	....	nil	234,734	....	nil	190,688
Ice cream	lb.	630,468	100·0	....	117,066	37·9	192,120
	$	141,418	100·0	....	26,049	37·1	44,225
Grand total	lb.	19,359,841	74·8	6,488,742	6,016,446	52·3	5,486,819
	$	833,264	41·0	1,198,113	336,014	27·5	885,395

NOTE:—Ice cream, 1 gal. = 6 lb.

The survey covered nearly all types of farm products, but only the dairy group is being discussed in this article. In the *Economic Annalist* for June 1942 the fluid milk supply of the Ontario markets was discussed.[2] Since then the Quebec field survey has been made, and it is clear that in that province as in Ontario, dairying is the main type of farming in the North. The value of receipts of all dairy products at the Ontario markets in the year was over two million dollars, and on the Quebec side was 1¼ million dollars. The total population of the Ontario towns in 1941 was 70,755. The figure for Quebec centres was 30,434. The Ontario markets are therefore about twice as big in aggregate as the Quebec markets.

Fluid Milk.—The Ontario local farming area supplied 41 per cent of the receipts of dairy products at those markets on the basis of value. Local production east of the border supplied only 28 per cent of Quebec town requirements. Thus, though specializing in the dairy enterprise, the Clay Belt produced insufficient quantity and variety for local needs. However, self-sufficiency in milk production comes earlier than in other dairy products. This commodity is especially difficult to transport efficiently over long distances, and specialized dairy sections have been developed adjacent to all the towns. This region was entirely self-sufficient in fluid milk supply. This is not borne out in the table because it is on a provincial basis. The Quebec towns required one-fifth of their supply from outside but this was actually obtained from the Ontario Clay Belt. There are no condenseries in the North, and all the canned and powdered milk was shipped from paints in the southern part of the two provinces.

As shown in the previous article as well as in the table, milk consumption in the Ontario towns was about 7¼ million quarts, and processed milk receipts were the equivalent of about 3 million additional quarts.[3] Quebec fresh milk consumption was only about 2¾ million quarts. However, processed milk provided a supplement of 2¼ million quarts equivalent (*see* table), which brings the total supplies in the two areas to the ratio of about 2 to 1 which the population would suggest.

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[2] The Milk Market in the Ontario Gold Belt, by L. Fortin and W. R. Peters.

[3] 2½ lb. fresh milk equal 1 quart; 1 lb. evaporated milk equals 1 quart fresh approximately.

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UNITED NATIONS CONFERENCE ON FOOD AND AGRICULTURE

J. F. BOOTH

The purpose of the Conference held at Hot Springs, Va., May 18 to June 3, was to direct attention to the food requirements of the post-war world and to consider what steps might be necessary in the fields of production and distribution to meet these requirements. With plans already under way for dealing with the needs of combatant and occupied countries in the months immediately following the cessation of hostilities, it was possible to focus attention on what might be called the reconstruction and long-run periods.

The agenda of the Conference was divided into four sections. Section one provided for the consideration of consumption levels and for an estimate of food requirements. Section two dealt with adjustments in production necessary to meet a probable increased demand for food and other farm and marine products. The third Section was concerned with matters of marketing and distribution; the fourth with the provision of a continuing organization to further the work of the Conference and to give effect to the recommendations made.

On the first point—consumption levels—delegates presented a great deal of information. In the report of the section summarizing the conclusions on this matter it is stated "malnutrition in varying degrees is found in all classes and countries... In India...a considerable proportion of the population does not get enough to eat... In China...much the same condition exists in normal times... In all Eastern countries very similar problems of nutrition are encountered. In all there is a low expectation of life and a high mortality rate... Resistance to many kinds of disease is low... There is abundant evidence of malnutrition and deficiency diseases (in tropical Africa)... In Mexico and in Central and South America food deficiency and widespread malnutrition exist." Quoting the 1937 report of the League of Nations Mixed Committee on Nutrition it is said, "In the United States and in Western Europe much malnutrition exists among lower income groups... In the British Dominions, although food consumption is relatively high malnutrition is not uncommon, especially among children. In Central and Eastern Europe malnutrition prevails extensively and there is often a lack of staple foods as well."

The report of this section notes that "dietary requirements of the populations of eastern and tropical countries are not essentially different from those of the races of western civilization," but in referring to objectives (which recognize existing reality) states that those put forward are not "beyond reasonable hope of attainment..."

The recommendations made by Section 1 begin with the request that governments commence immediately the task of increasing food resources and of improving the diets of their people in accordance with the findings of the Conference. Also that they report to one another, through a permanent organization to be established, on the state of their national nutrition and on the steps taken for its improvement. Other recommendations deal with the diets of vulnerable groups, with deficiency diseases, with the establish-

ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Living Costs and Production Indexes Computed by Dominion Bureau of Statistics: Index of Industrial Wage Rates Published by Department of Labour

Year	Wholesale Prices 1926=100				Retail Prices		Production and Wages 1926=100		
	All commodities (1)	Farm products (2)	Field products (3)	Animal products (4)	Urban Living Costs 1935-1939 =100 (5)	Farm Living Costs 1935-1939 =100 (6)	Physical volume of business (7)	Industrial production (7)	Industrial wages rates (8)
1913....	64·0	64·1	56·4	77·0	79·7	79·6	....	....	53·7
1914....	65·5	70·2	65·4	78·3	80·0	82·0	....	....	54·4
1915....	70·4	77·9	76·9	79·5	81·6	86·3	....	....	54·8
1916....	84·3	89·8	88·8	91·4	88·3	93·6	....	....	58·8
1917....	114·3	128·5	134·5	118·4	104·5	111·6	....	....	67·4
1918....	127·4	132·6	132·0	133·6	118·3	131·4	....	....	78·0
1919....	134·0	146·7	142·6	153·5	130·0	143·0	71·3	65·5	93·1
1920....	155·9	160·6	166·5	150·8	150·5	170·7	75·0	69·9	111·5
1921....	110·0	103·7	100·3	109·5	132·5	139·5	66·5	60·4	101·9
1922....	97·3	88·0	81·4	99·0	121·3	127·5	79·1	76·9	96·7
1923....	98·0	81·5	73·3	95·1	121·7	127·9	85·5	83·8	98·9
1924....	99·4	88·1	82·7	97·2	119·5	125·1	84·6	82·4	100·1
1925....	102·6	101·0	98·2	105·6	120·6	123·6	90·9	89·7	99·4
1926....	100·0	100·0	100·0	100·0	121·8	120·9	100·0	100·0	100·0
1927....	97·7	102·1	99·9	105·7	119·9	119·5	106·1	105·6	102·2
1928....	96·4	100·7	92·6	114·3	120·5	118·3	117·3	117·8	103·2
1929....	95·6	100·8	93·8	112·5	121·7	117·4	125·5	127·4	105·2
1930....	86·6	82·3	70·0	102·9	120·8	113·7	109·5	108·0	105·8
1931....	72·1	56·3	43·6	77·6	109·1	103·7	93·5	90·4	101·5
1932....	66·7	48·4	41·1	60·7	99·0	97·7	78·7	74·0	95·4
1933....	67·1	51·0	54·8	59·7	94·4	95·7	79·7	76·8	90·3
1934....	71·6	59·0	53·8	67·7	95·7	97·8	94·2	93·6	91·5
1935....	72·1	63·5	57·3	74·0	96·2	97·9	102·4	103·3	94·1
1936....	74·6	69·4	65·8	75·3	98·1	98·3	112·3	114·4	95·9
1937....	84·6	87·1	88·3	85·0	101·2	102·8	122·8	120·8	102·9
1938....	78·6	73·6	69·0	81·3	102·2	101·9	112·9	114·6	106·0
1939....	75·4	64·3	54·2	81·2	101·5	99·4	122·4	125·6	106·4
1940....	82·9	67·1	55·9	85·2	105·6	108·6	145·4	156·1	109·1
1941....	89·9	71·2	56·5	95·8	111·8	114·2	135·6	148·6	119·9
1942....	95·6	82·5	66·5	109·2	116·8	119·2	201·7	227·2	....
							1935-39=100		
1942									
Jan.....	94·1	79·2	62·8	106·7	115·4	....	192·3	216·5	....
Feb.....	94·6	80·4	64·4	107·3	115·7	....	192·9	216·3	....
Mar.....	95·0	80·8	64·6	107·9	115·9	....	189·3	207·7	....
April...	95·0	81·4	65·0	108·9	115·9	118·4	198·1	220·8	....
May....	95·2	80·2	65·5	104·8	116·1	....	195·5	217·3	....
June....	95·8	81·5	66·3	107·0	116·7	....	200·0	222·1	....
July....	96·1	81·1	67·7	103·5	117·9	....	203·7	229·4	....
Aug.....	95·5	81·3	68·4	103·0	117·7	....	205·7	232·5	....
Sept....	95·8	84·3	67·6	112·2	117·4	119·9	206·1	235·1	....
Oct.....	96·6	85·7	67·9	115·5	117·8	....	207·2	238·6	....
Nov	97·0	86·5	68·4	116·7	118·6	....	207·8	239·3	....
Dec	97·0	87·1	69·0	117·3	118·8	....	221·2	250·8	....
1943									
Jan.....	97·1	87·6	70·6	116·2	117·1	....	225·8	254·6	....
Feb	97·5	88·5	71·6	116·8	116·9	....	227·3	267·8	....
Mar.....	98·5	91·2	75·4	117·6	117·2	....	231·7	269·1	....
April ...	98·9	92·3	76·8	118·2	117·6	121·1	236·9	274·4	....
May....	99·2	92·8	77·4	118·7	118·1	....	231·8	267·8	....
June.....	99·5	94·4	79·4	119·4	118·5		232·4	267·2	

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1. See Prices and Price Indexes 1913-1928, pp. 19-21, 270-289 and 1913-1939, p. 17.
2. Wholesale prices of Canadian products of farm origin only. See prices and Price Indexes 1913-1937 p. 52, and Monthly Mimeographs 1942-43.
3. Wholesale prices of grain, fruits and vegetables.
4. Wholesale prices of animals and animal Products.
5. See An Official Cost of Living Index for Canada, 1940.
6. Index numbers of Farm Family Living Costs 1913-38 and Farm Living Expenditures 1934 and Farm Family Living Costs mimeograph.
7. Monthly Review of Business Statistics, p. 8, and Monthly Indexes of the Physical Volume of Business in Canada, supplement to the monthly Review of Business Statistics, November, 1932. Yearly index numbers for 1942, subject to revision.
8. Department of Labour, *Labour Gazette,* January 1942.

ment of national nutritional organizations, the exchange of information and experience, the acceptance of dietary standards, and the establishment of national standards of minimum consumption of certain non-food agricultural and marine products.

Dealing with the second point on the agenda, namely, the expansion of production and its adaptation to consumption needs, the report of Section 11 suggests that the post-war years (following the immediate period of relief) will divide into two more or less distinct periods. The first or short term period will witness an urgent demand for food to alleviate famine. Elimination of hunger must be the first consideration in this period and this can be achieved most rapidly by increasing "in so far as the conditions of individual countries require or permit," the acreage under crops for direct human consumption.

With the recovery of the devastated areas and intensified production elsewhere there will be danger of over-production of cereals, sugar and other products, accompanied by a serious decline of prices. This, the report states, "can be avoided provided that nations act with foresight and at the right time."

In the transition between the short and long term periods it will be essential that nations progressively adjust their production program and the allocation of resources so as to increase the output of foods required for an improved diet. With hunger satisfied effort can be directed toward the production of nutritionally better food.

The report of this section then goes on to discuss the factors that contribute to increased efficiency: (*a*) improved farming systems and practices, (*b*) adequate low cost credit, (*c*) co-operation, (*d*) improved land tenure, (*e*) research, (*f*) education. Concerning the last two factors the report makes specific reference to the need for more information on the economic and sociological side of farming.

While urging greater production and increased efficiency the Conference recognizes that over-population on the land in some countries forces farmers to produce crops that supply the minimum energy requirements of the rural inhabitants and leave little time for the production of protective foods. The difficulties associated with over-population might be mitigated by emigration, but they cannot be solved by this means. "The real clue to the solution of the problem of agricultural over-population lies in industrialization."

The above matters formed the basis for eleven recommendations contributed by this section. Briefly summarized they provide a working program for a permanent organization. They aim at greater production and increased efficiency. In the short term period of possibly several years after the war, this means emphasis on cereals and other crops that will provide a maximum food output for the satisfaction of hunger. For the long run period it calls for increased production of protective foods—live stock and dairy products, fruits and vegetables. And basic to the whole program is recognition of the need for increased farm income.

Concerning the third phase of the problem under consideration, namely, improvements in marketing and distribution, the Conference recognized that little progress can be made unless security can be guaranteed. Pointing out that aggression, and fear of aggression, have induced uneconomic production, the imposition of trade barriers, discriminatory trade practices and the expenditure of huge sums for armaments, it was urged that the governments represented "affirm the principle of mutual responsibility and co-ordinated action to establish such conditions of international security as will make possible an expanding and balanced world economy." The report of Section III then goes on to urge the reduction of every kind of trade barrier and the adoption of methods to reduce the costs of distribution in international trade.

One of the most keenly debated subjects on the agenda was that concerning fluctuations in prices and the part that international commodity agreements might play in reducing such fluctuations. It was pointed out that extreme variations in prices constitute an obstacle to orderly production and distribution. It was agreed that, while international commodity arrangements may contribute toward an improvement in this field, more study is necessary to determine the precise forms that such an arrangement should take. The establishment of an international organization to study the feasibility and desirability of such arrangements was recommended.

Other matters considered under the heading of marketing and distribution and on which recommendations were made included: (1) the need for food distribution programs to insure that special groups, including low paid workers, get sufficient of the protective foods, (2) special international measures for wider food distribution; (3) consideration of the practicability of international grades and standards; (4) additions to, and improvements in, marketing facilities, and (5) measures for increasing the efficiency of marketing.

The final act of the Conference included a declaration that freedom from want of food suitable and adequate for the health of all peoples can be achieved, and recommended that the government of the forty-five countries represented study and and adopt the findings of the Conference. This was accompanied by a recommendation that an international organization to give effect to the findings of the Conference be established. To this end it was urged that an Interim Commission be established in Washington not later than July 15, 1943, and that this Commission formulate and recommend for consideration by each member government or authority a specific plan for a permanent international organization in the field of food and agriculture.

The importance of this Conference to Canada depends of course upon the extent to which its recommendations are accepted and applied. The delegates to the Conference could only recommend; they had no authority to commit their respective governments to any course of action. For two reasons, however, one is justified in believing that something tangible may result from this gathering: one is the obvious sincerity of those who attended the Conference and drafted the recommendations; the other is the fact that the recommendations are in keeping with enlightened public opinion in all countries.

If action is taken as recommended there will be an increased demand for food and other farm products. That being the case there will be increased opportunities for countries in a position to produce these things economically. Canada should benefit from any such development. There is of course an obligation implied in such a program, an obligation associated with trade in its broadest aspects and which requires that we be prepared to accept the products of other countries in exchange for those we have to offer.

Acceptance of the recommendations also imposes upon us an obligation to take appropriate steps to assure our own people of an adequate supply of desirable foods. It is probably true that few, if any, people have gone hungry in Canada, but it is equally true that some have lacked the essentials of a satisfactory diet. This applies to both urban and rural population. It is possible that in our desire to meet competition we have emphasized the economics of specialization to the exclusion of adequate nutrition. If the program suggested results in a little greater attention to health requirements, in the production of somewhat more of the protective foods—live stock and dairy products, fruits and vegetables—than was the case before the war, there should be no serious objection.

Areas that are committed to a high degree of specialization by reason of geographic and climatic conditions must continue to produce the products that can be raised and marketed to advantage. The principles adopted by the Conference recognize both the necessity and the merit of such a program. They oppose, however, the uneconomic extension of such specialization and they urge, within the limits suggested, greater emphasis on diversification and balance to the end that farm income may be stabilized and diets, both rural and urban, improved.

In other respects, too, the recommendations of this Conference will affect Canada. But whether they confer benefits or impose obligations—and they may be expected to do both—the net effect is likely to be one of gain. Any program based upon the principle that the world should be better fed, and which recommends appropriate steps to that end, should be of benefit to all people and to none more than to a nation equipped to produce a substantial volume of food for export.

CANADA PLANS POST-WAR AGRICULTURE

Frank Shefrin

This article has a single purpose, to describe the activities of the Dominion and Provincial governments and various other bodies towards a post-war program in agriculture. The war has made Canadians conscious of the many unsolved farm problems; it has created new problems of its own; it suggests difficult adjustments to be made in the years ahead. In the last three years, Canadian agricultural production has been greatly expanded to meet the ever-growing needs of the United Nations abroad and consumers at home. There has been a shift in the type of agricultural production from wheat to live stock on the Prairies, and increased emphasis on the production of oil crops, such as soybeans in Ontario and flaxseed in the West. Some of the problems that will be faced by Canadian farmers in the immediate post-war period are: the retention of the overseas market, the maintenance of the high level of domestic consumption and an adjustment of the production program. Farmers as a group and Canadians as a whole have no desire to see a repetition of the experience of the early Post-World War 1 period, or the trying days of the depression in the thirties.

In planning the place of agriculture in a post-war world of plenty, it is clear that study and research is an integral part of the planning process. Such a program should deal with the adequate distribution of farm goods; technological effects upon family farms and commercial farming, tenancy; farm indebtedness and credit facilities; forestry; range improvement; water facilities; and the general field of conservation; new uses of farm products; international trade; immigration; improvement of rural living standards in terms of rural education, rural housing, health and nutrition, rural hospitals, and recreational facilities. In addition, there is also the important problem of enabling returned soldiers to settle on the land and become successful farmers.

In order to be successful, post-war planning requires joint effort on the part of all groups within the country. Thus Dominion-Provincial co-operation is necessary in the working out of programs designed to provide stability for agriculture, because the problems of agriculture vary greatly in each province. In turn, farmers and their organizations, universities and other agencies are providing many of the ideas which are to be incorporated into a post-war agriculture. At the same time there is recognition of the fact that any plan for a better agriculture has to be dovetailed into the broader outline of a desirable post-war world.

The activities of the Dominion Government will be dealt with first.

Advisory Committee on Reconstruction.—The Reconstruction Committee is an advisory committee composed of persons prominent in the fields of education, agriculture, labour and commerce. It was formally constituted by Order in Council in September, 1941, and until recently reported to the Minister of Pensions and National Health. The functions of the committee are to conduct studies and research in every field of Canadian economic and social life with a view to determining facts upon which Government reconstruction policies must be based.

In January, 1943, activities in the field of post-war planning were recognized. Because increased attention was being given to this matter by the departments and agencies of government, it was deemed desirable that the responsibility for advising the Government in respect to such plans be assumed by a body consisting of officials of the departments and agencies primarily concerned. Accordingly the Advisory Committee on Economic Policy, which was originally set up in September, 1939, was charged with the additional function of conducting investigations and studies of post-war problems in co-operation with the Committee on Reconstruction and other government agencies.

In turn, the Reconstruction Committee was charged with the following duties: to make such recommendations and to draw attention to such considerations in the field of post-war problems as it deems desirable; and to undertake such investigations and studies of post-war problems as may from time to time be determined in co-operation with the Advisory Committee on Economic Policy, or as the President of the Privy Council may direct. The Reconstruction Committee, like the Committee on Economic Policy, is now responsible to the Prime Minister and reports to him.

Under the main committee there are at present six sub-committees dealing with: Agricultural Policy, Conservation and Development of Resources, Post-War Construction Programs, Housing and Community Planning, Post-War Opportunities and Post-War Problems of Women. The functions of the sub-committee on Agricultural Policy are to study the problems of Canadian agriculture with particular reference to the desirability of raising the nutritional level of all Canadians to a desirable standard; to study the probable developments in the international movement of Canadian agricultural products; and to recommend to the Committee on Reconstruction a comprehensive program for the rehabilitation of Canadian agriculture at the end of the present war. Under the direction of the main committee or of the sub-committee on Agriculture, various studies have been undertaken. These include: Canadian population trends[1]; settlement possibilities; industrial utilization of agricultural products; and nutrition in relation to production and marketing. The agricultural sub-committee is also giving consideration to such matters as international trade, farm credit, rural electrification and research and education as they relate to increased efficiency.

Two other sub-committees deal with certain aspects of agriculture. They are the committee concerned with the conservation and development of natural resources, which considers conservation of soil, water and forest; and the committee on housing and community planning which deals, among other things, with rural housing and community planning. The sub-committee on post-war problems of women will also give some attention to matters specially affecting farm women.

Rehabilitation of War Veterans.—The rehabilitation of men returning from the armed forces is an important consideration in post-war planning. To deal with this matter the Dominion Government established a committee in the fall of 1939, soon after the outbreak of war. This committee has been very active in providing for the thousands of men and women that have already been demobilized and in making ready for the much greater number that will have to be returned to civil life once the war ends.

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[1] Completed.

Veterans' Land Act.—One of the matters already dealt with by the Rehabilitation Committee is land settlement. Developed by the committee and sponsored by the Government, an Act providing for the establishment of war veterans on farms or on small holdings has been passed by Parliament. The Act provides financial assistance to veterans to become established in the business of full time farming. The maximum financial assistance under the Act on behalf of the veteran is $4,800, of which $3,600 is the maximum for land and buildings, and $1,200 is the maximum for chattels. But the maximum indebtedness which the veteran assumes is $2,400. Under the Veterans' Land Act, three main types of establishment will be available, (*a*) full time farming for men with practical experience in farm operation, (*b*) small holding settlement which means a rural home and small acreage located close to employment; in other words, part-time farming, (*c*) small holding settlement coupled with commercial fishing in Canada's coastal regions or inland districts where fishing is engaged in on a commercial basis.

If necessary, veterans will be given a course of training or placed with a selected farm operator for a period to get practical experience or additional experience with regard to feeding, care and handling of live stock and farm management.

Parliamentary Committees on Reconstruction and Re-establishment.—These are committees composed of members of the House of Commons and the Senate. The purpose of these committees is to study and report to Parliament upon general problems of reconstruction and re-establishment which may arise at the end of the war and all questions relating thereto. Briefs have been presented to the committee dealing with a post-war Canada by representatives of government agencies, other organizations and by individuals. This information will serve as factual background material for post-war reconstruction legislation.

International Wheat Agreement.—As previously indicated, one of the most important tasks in post-war planning is the expansion of international trade. Canadian wheat farmers are particularly conscious of this necessity since the future prosperity of wheat growers depends upon the ability of Canada to sell its grain in overseas markets. A practical step in meeting this need is the interim wheat agreement between the four major export countries—United States, Canada, Australia and Argentina, and the major importer, the United Kingdom. The purpose of the agreement is to tide over any unexpected developments in the immediate post-war period until such time as the situation can be reviewed by a full conference of all the interested nations. This agreement goes well beyond earlier international agreements for stabilizing the markets for particular commodities for it outlines provisions for production controls, the maximum and minimum prices, reserve stocks, as well as allocation of export quotas among the principal surplus producing countries. These provisions are to be observed for a maximum period of two years dated from the cessation of hostilities except in the event they are incorporated as part of a larger agreement that may be reached in a conference of all the countries to be called at the end of the war. One of the important measures in this agreement is the decision of the five participants to establish a pool of wheat which will be available for relief in war stricken countries and in other areas of the world where the situation warrants such assistance.

Canada is a member also of the Inter-Allied Committee and the Allied Post-War Requirements Bureau. One of the committee's sections which has been meeting regularly during the past year, is the Technical Advisory Committee in Agriculture. Sub-committees have been assigned specific problems relating to seeds, live stock, fertilizer and agricultural machinery. The Chairman of the Live Stock Sub-Committee is a senior official of the Canadian High

Commissioner's office in Great Britain. The Seeds Sub-Committee has made estimates of the kinds, quantities and sources of seeds, both agricultural and horticultural, required to re-establish cultivation of arable land in the allied countries of Europe.

Canada participated in the United Nations Food Conference held in the United States in May, 1943. The Conference recognized "that in the past excessive accumulations of certain agricultural products were in fact not surpluses at all when measured by the world's minimum needs of food and clothing; that these so-called surpluses were usually the result of maldistribution and under consumption." The Conference considered "the prospects for so organizing world agricultural production so as to enable the satisfaction of these needs and to explore the measures, both domestic and international, by which production can be enhanced and better directed in terms of consumption." It examined "the measures and conditions which are necessary to assure that what can be produced moves into consumption."

Social Security for Canada.—Although the recent study of social security for post-war Canada prepared by the Research Advisor to the Committee on Reconstruction does not deal specifically with agriculture, its findings apply vitally to the agricultural population of this Dominion. This report lays great emphasis on the fact that a policy for economic security as well as for welfare security is needed. This, the report indicates, can only be accomplished by the bold act of income mobilization.

The report recommends that a substantial public works and national development program be prepared for the transition period, possibly amounting to one billion dollars in the first instance. It also deals with possibilities of extension of unemployment insurance; the introduction of contributory health insurance; sickness insurance benefits; allowances for all children under 16; maternity benefits to working women; permanent disability pensions; payment of funeral costs. The estimated cost of this program is 10 per cent to 12½ per cent of the national income or approximately 900 million dollars. It is particularly emphasized that health insurance, disability pensions, and widows' pensions should be so planned as to be available to the rural and agricultural population, and that an appropriate contribution and administration basis must be organized to permit this.

Provincial Activities.—In the Maritimes, Price Edward Island has recently appointed a Committee on Reconstruction and Rehabilitation which is considering agricultural possibilities and the best plan for soldiers to follow on their return from war. New Brunswick has a provincial committee on post-war planning and also an agricultural committee under the chairmanship of the Minister of Agriculture. An agricultural survey is being made for the purpose of obtaining information which may be used in a reconstruction and rehabilitation program after the war. The Province of Nova Scotia has taken steps to determine the number of farms suitable for post-war settlement. In the fall of 1939, Nova Scotia's Advisory Committee on Agricultural Services named a Committee of Rehabilitation. In the spring of 1942 a Supervisor of Rehabilitation was appointed and he worked with county committees in classifying farms suitable and available for settlement.

In Quebec, an Economic Advisory Council was appointed in May, 1943, to study all aspects of post-war problems, including agriculture. Ontario has set up a Committee on Agricultural Policy to consider post-war plans for the province. The Dominion and Ontario Governments are co-operating in a land use study of the Ganaraska Valley. The purpose of this study is to classify the land in that area on the basis of use and this classification is to be used as a guide in post-war planning as regards settlement and general farm and conservation practices.

The Province of Manitoba has a specific program for post-war activity in the extension of rural electrification and is developing other studies. The Manitoba Electrification Enquiry Commission in its report recommends the extension of hydro-electric power to the majority of Manitoba's 58,686 farm houses; and that the project be started immediately after the war with a minimum of a thousand farms serviced the first year and steadily increasing each year, with at least 25,000 at the end of ten years. It also recommends that densely populated farm areas be serviced first. In the less densely settled areas and where it is practical and essential, the Commission suggests that farmers themselves should be organized into self-help bodies (or co-operative associations similar to those in the United States).

In addition, the Universities of Manitoba and Minnesota are co-operating in a study of effects of alternative post-war settlements on the economies of the Prairie Provinces and the central northwest region of the United States.

In April of this year, the Saskatchewan Government established a Reconstruction Council. The functions of the Council are to study and investigate conditions and problems that are likely to arise during or after the conclusion of the war, and also recommend plans, policies and activities to meet these problems.

In Alberta, irrigation plays an important part in post-war plans. In a report, issued February, 1942, on storage and irrigation works required to utilize fully Canada's share of international streams in Southern Alberta, the St. Mary and Milk Rivers Water Development Committee recommends that Canada should construct at an early date, as a post-war project, the necessary irrigation works to protect by beneficial use its share of the St. Mary and Milk Rivers.

An interesting recommendation by the Committee calls for the settlement and colonization of the irrigated lands. "A policy which combines to a large degree sound land use practices with individual rehabilitation can be readily accepted as further justification for the development of feasible irrigation projects."

In April, 1943, the Alberta Government established a Post-War Reconstruction Committee to survey the economy of the province, plan for rehabilitation of returned soldiers, survey agricultural lands and study markets.

The Province of British Columbia set up in February, 1942, a Post-War Rehabilitation Council. Some of the tasks assigned to the Council are a survey of the total resources of the province with a view to creating opportunities, a study of agricultural lands for settlement, to ascertain the future possibilities of the various phases of farming in the different parts of the province with a view to supplying the demands for farm produce in profitable available markets, to prepare plans for the rehabilitation of returned soldiers and unemployed munition workers.

The Council in January of this year issued its first interim report, covering a wide variety of activities. It is the first comprehensive provincial report dealing with post-war recommendations to be issued in Canada. The recommendations made dealing specifically with agriculture cover land settlement for veterans and others and the factors influencing land settlement, crown lands, parity prices, taxation for education, land clearing, application to British Columbia of the Prairie Farm Rehabilitation Act, soil surveys, Farm Loan Board, regional development and technical agricultural personnel. The Council also has recommendations covering co-operatives, nutrition, fur farming, improvement of forests, promotion of rural electrification, and vocational training in agriculture.

In all cases the provincial governments have indicated their willingness and desire to co-operate with the national Advisory Committee on Reconstruction.

Conclusion.—It is apparent from consideration of the activities underway that authorities generally recognize that no single program can bring prosperity to agriculture. A rural electrification program may not be possible in a partially settled area. Even cheap electric power cannot be made available to farmers who have insufficient income to meet the monthly charge. Then again, the availability of electric power is dependent upon the measures taken to maintain the water resources within the area in question. A land ownership program is closely tied in with adequate farm credit. Technological changes in agriculture are to a large extent related to the size of the farm and nature of farm practices and have to be dealt with accordingly.

In summation, all these factors are interwoven and interdependent and a post-war plan for agriculture should consider all of these as parts of a whole. Agriculture, in turn, should be considered as part of an integrated Canadian economy.

THE MARKETING OF DAIRY PRODUCTS IN THE ONTARIO AND QUEBEC GOLD BELTS

Part II

E. P. Reid and W. R. Peters

It appears that the whole milk markets in Quebec are not as well developed as in the Ontario towns. This is indicated not only in a lower per capita consumption (compensated by relatively more evaporated milk shipped from a distance), but also by the fact that one-fifth of fresh milk needs came from the Ontario North. This means rail shipments of about 100 miles, more distant supply than for any Ontario town in the area. This movement supplied only Rouyn-Noranda, the largest of the Quebec centres.

LaSarre and Amos are in the heart of the Clay Belt. All milk sold there was producer-distributed and none was pasteurized. Val d'Or is more distant from farm sections than is Rouyn and is also the newest market in the north, being less than 10 years old. Thus, with the necessity of drawing milk from considerable distances, Val d'Or has almost complete pasteurization and only three distributors. Rouyn and Noranda have aspects of both these extremes of systems. There are four pasteurizing distributors drawing supply from Quebec and Ontario, and numerous nearby producer-distributors of raw milk. Pasteurized sales at Rouyn-Noranda outweigh raw sales many times over. It will be recalled that pasteurization is compulsory on all Ontario markets, and fewer distributors handle a bigger volume of sales.

Cream.—The cream supply situation differs somewhat in the two provinces. At Rouyn-Noranda, some cream is obtained from Ontario producers, while at the other Quebec towns local supply only is utilized. Altogether more than four-fifths of the cream sold in Quebec towns is locally produced. On the other hand, Ontario markets obtain half their cream from southern Ontario, particularly North Bay and Toronto areas. The contrast in situations is understood only in the light of the entire dairy situation in each part of the area. Ontario distributors have found in the past that producers were not interested in supplying cream regularly in adequate quantities throughout the year. It was always obtainable from the southern points and in winter particularly, supply was from the south. Quebec towns are more remote from southern points and therefore have not quite as favourable express rates. More important, with so much cream going regularly to creameries, it is not difficult to obtain comparatively small amounts for fresh cream distribution. The Northern Ontario supply is received by the same Rouyn dairies that obtain milk in Ontario. An important factor is that, although Rouyn has rail service from three directions, only the line from northern Ontario has a Sunday train. For this reason the dairies obtain supplies of milk and cream from Ontario farmers.

Ice Cream.—At Kirkland Lake, none of the milk is sold for less than the whole milk price. At Timmins there is a surplus price, but supply tends to be short. For these and other reasons ice cream manufacture is somewhat concentrated at New Liskeard, a town not included in this survey but in the midst of the old farming area south of Kirkland Lake. From this point, both frozen ice cream and ice cream mix are shipped to all the markets included in this study. There are also local manufacturers in other towns in both provinces.

Butter.—The situation with respect to butter supply reflects the lack of maturity of the dairy business in this northern area. The maladjustment is similar in both provinces and consists in importing about 4 million pounds of butter and exporting between 1 and 2 million pounds. This latter amount cannot be more than roughly gauged from the data gathered because in the southern sections of the region on both sides of the border there are urban centres not included in the study which absorb some of the northern production. The large in-and-out movement of butter is attributable to high seasonal production and absence of cold storage facilities.

During the 12 months' period for which information was obtained, the 8 creameries of northern Ontario produced 1,066,852 pounds, of which only 493,000 pounds were sold in the markets studied. The 20 creameries of Abitibi and Temiscamingue counties made 2,728,196 pounds in the calendar year 1941, but only about 311,000 pounds were consumed locally. In 1940-41, 13,700 pounds were shipped to northern Ontario.

The large shipments of imported butter, about 85 per cent of the requirements came from various production areas, both south and west, but particularly the latter. The traffic is part of the packing house business carried on by three national companies. They place regular weekly and semi-weekly carlot shipments of mixed produce and meat from Winnipeg at about a dozen points in the territory studied. The salesmen for these and southern packers make their regular rounds, and are as ready to take butter orders as orders for meat, not only because a certain profit is obtainable, but because they can more easily keep their tonnage above the car minimum on which they must, in any case, pay freight. Thus if such companies do not establish a connection with northern creameries, they inevitably push western and southern butter with their retailer customers. The price inducement in favour of local production at any time is measured only in fractions of a cent a pound, and with carload weight to be considered, price alone does not always govern the traffic. However, these large companies have not altogether neglected local butter supply and they sell northern butter as well as the western product. There is direct selling from creamery to retailer as well.

Cheese.—The same general circumstances suggested for butter pertain to cheese supply, except that consumer preference makes processed cheese a large percentage of total marketings. Nevertheless northern cheddars move to Montreal at times, and southern Ontario and western cheddars move to the northern territory. There are local cheese factories in both provinces adjacent to these markets, but only 32,000 pounds was apparently marketed locally. Northern Ontario production in the survey year was 128,000 pounds, and in the calendar year 1941 Northern Quebec production was 48,000 pounds.

Conclusion.—There are some 5,000 farmers in Cochrane and Temiskaming districts, only 14 per cent more than ten years ago. Abitibi and Temiscamingue have over 9,000 farms, 2½ times the number in 1931. Ontario producers are in large measure dependent upon the mining towns for a market for their produce. Since much of the bush has been exhausted in the farming areas, Ontario farmers may be expected to supply progressively more of the dairy products required by these towns and now largely provided by distant areas. Potentially Quebec farmers and colonists are just as interested in the mining town markets. But colonization has proceeded steadily there in recent years, and as new parishes were established and older ones grew, new dairy factories have commenced operations. It has already been indicated that the output is greatly in excess of the requirements of local towns. Sensitivity to local demand seems more in evidence in Ontario.

AVERAGE PROGRESS OF SETTLERS IN THE ALBERTVILLE-GARRICK, NORTHERN PIONEER AREAS, SASKATCHEWAN, 1941

R. A. Stutt

The series of crop failure years in Southern Saskatchewan, beginning in 1931 and coinciding with the world-wide depression of that period were the main reasons for the development of new areas of settlement in Northern Saskatchewan. In many sections of the south drought and drifting soil combined to deplete economic resources and devastate the countryside. Many farmers located on marginal and sub-marginal land came to the conclusion that farming under such conditions was a hopeless task. As a result a new trek of land seekers developed and as suitable additional arable land was not to be found in the prairie regions these farmers invaded the northern areas.

This trek opened up a new stage in land settlement in Saskatchewan. Many new agricultural problems developed and serious hardships were encountered. For the most part, the new settlers were prairie farmers unacquainted with farming in a forest region. Further discouragement resulted in many cases due to the slow rate of progress in clearing and breaking and to personal inconveniences.

To study the problems of land settlement in Northern Saskatchewan and to point out the economic aspects of agricultural development there the Economics Division, Marketing Service, Dominion Department of Agriculture, in co-operation with the Department of Farm Management, University of Saskatchewan, decided in 1941 to make a pioneer farm business study in the Albertville-Garrick area. This study was followed by a similar project in 1942, covering eight representative areas, the results of which are not available as yet. As future expansion of settlement in Saskatchewan will be confined to northern areas the results of these settlement studies should be of considerable value in the shaping of land settlement policies for the northern forest regions of the province.

It is quite apparent that much factual data are necessary before a satisfactory policy of land settlement can be decided upon for these northern pioneer areas. Specifically the purposes of this first study in the series are as follows—

(1) To measure the progress of settlers in northern pioneer areas.
(2) To isolate factors favourable and unfavourable to progress in land settlement.
(3) To appraise possibilities of settlement in these regions for providing a net income sufficient for a reasonable standard of living, and to determine the minimum cropland required on different grades of land and the adequacy of the quarter section farm.
(4) To secure information which will provide a basis for settlement policies in the post-war period.
(5) To appraise the possibilities of rehabilitation of families from the drought areas and of returned soldiers.
(6) To determine the amount of capital required at different stages of settlement and the amount of subsistence aid necessary during the early stages.
(7) To gather information regarding the productivity of grey wooded soils, clearing and breaking of scrub or bush lands and sources of outside income.

The area selected for the 1941 study included those farms in townships 51, 52 and 53, ranges 16 to 24, west of the second meridian. It borders the northern boundary of the Fort a La Corne Forest Reserve. The western boundary of the area is approximately 20 miles north of Prince Albert and it extends to Garrick, which is 20 miles west of Nipawin. About one-quarter to one-third of the farmers in each township were selected at randon. A total of 304 settlers were included in the sample.

The unimproved portion of this area is covered with medium to heavy bush. The soils of this area are mainly of the podzolized or "grey bush" soil zone with the exception of the western portion (from Albertville to Weirdale). This latter portion is in the transition zone between the tall grass "park" zone and the podzolized soil zone. In the Albertville-Garrick area the

TABLE 1.—METHOD OF ACQUISITION OF FIRST PARCEL OF LAND ALBERTVILLE-GARRICK, 1941

—	Number of Operators	Percentage
Homestead	207	68·0
Homestead and pre-emption	3	1·0
Soldier's Grant	2	0·7
Purchase	66	21·7
Legacy	11	3·6
Rented	15	5·0
Total	304	100·0

TABLE 2.—LAND UTILIZATION BY SIZE OF FARM—ALBERTVILLE-GARRICK AREA, 1941

—	Size of Farm (cultivated acres)				
	0–49	50–99	100–199	200 and over	All farms
Number of records	67	136	76	25	304
Total acres	165	191	256	525	229
Wheat	11	33	64	146	47
Oats	9	12	19	26	14
Barley	1	3	7	14	4
Rye and flax	1	1	2	7	1
Alfalfa seed	3	5	7	20	6
Alfalfa hay	2	2	3	6	3
Other crops	1	2	4	7	2
Summerfallow	1	4	11	26	7
Breaking	4	9	10	32	10
Total cropland	33	71	128	284	94
Percentage of Total					
Wheat	34	46	50	51	50
Oats	27	17	15	9	15
Barley	3	4	5	5	4
Rye and flax	3	1	2	3	1
Alfalfa seed	9	7	5	7	6
Alfalfa hay	6	3	3	2	3
Other crops	3	3	3	3	2
Summerfallow	3	6	9	9	8
Breaking	12	13	8	11	11
Total	100	100	100	100	100

soil textures vary from very fine sandy loams to clay loams and clays. Loams and clay loam to clay soils predominate in the eastern portion and loams in the western section. Stones are not a serious hindrance to cultivation.

About seventy per cent of the present operators of these farms acquired their land by homesteading, pre-emption or soldiers' grants (table 1).

A substantial number of settlers acquired their land through purchase.

The present use of land by these settlers is shown in table 2. The importance of wheat as a cash crop increased with increases in the size of farm. On the smaller farms (less than 50 acres of cultivated land), thirty-four per cent of the acreage was seeded to wheat in 1940. The percentage increased until 51 per cent was seeded to wheat on farms with over 200 acres of cropland.

Alfalfa for hay and seed was a relatively important crop, particularly on the smaller sized farms. About two-thirds of the alfalfa acreage was left for seed production. Farms located on the podzolized and "transition" clay loams averaged 60 acres of cropland compared with 77 acres for farms on sand to fine sandy loams and 99 acres of cropland for farms located on very fine sandy loams to loams. The percentage of cropland devoted to wheat was highest on the clay loams and clays.

The progress made in clearing and breaking has accelerated somewhat during the last few years. Table 3 shows the average amount of clearing and breaking by years for the various soil groups.

TABLE 3.—AMOUNT OF CLEARING AND BREAKING EACH YEAR BY SOIL TEXTURAL GROUPS, ALBERTVILLE-GARRICK AREA, 1941

—	Podzolized and Degraded Soils				All soil groups
	Sand to fine sandy loams	Very fine sandy loams to loams	Clay loams to clays	Peats and alkali	
	acres	acres	acres	acres	acres
Number of farms	68	108	95	8	279[1]
1940	8·4	10·4	12·0	7·6	10·4
1939	7·0	7·0	8·3	5·4	7·4
1938	9·0	9·5	12·1	6·2	10·2
1937	6·5	6·8	9·0	2·0	7·3
1936	5·2	5·9	5·7	3·4	5·6
1936–1940	7·2	7·9	9·4	4·9	8·2
1935	3·4	5·4	6·1	7·8	5·3
1934	3·1	5·8	4·1	5·8	4·6
1933	2·9	4·4	3·9	3·4	3·8
1932	2·6	3·3	2·3	2·1	2·7
1931	2·2	2·9	3·5	1·8	2·9
1931–1935	2·9	4·0	4·0	4·2	3·9
1931–1940	5·1	6·1	6·7	4·5	6·0
1930	2·1	2·7	3·0	0·6	2·6
1929	....	2·7	2·2	....	1·8
Previous to 1929	2·5	7·4	5·0	....	5·1

[1] 25 records omitted with no information on breaking.

The average number of acres of clearing and breaking per farm for all soil groups was greater for the period 1936-40 than for the period 1931-35.

To give some indication of the progress a new settler can expect in clearing and breaking based on the experience of settlers in this area, table 4 was prepared. This table shows the amount broken up for the first, second, third year and so on, during the term of their occupancy. Based on the experience of these settlers about 5·5 acres can be cleared and broken up each year in this area.

TABLE 4.—AVERAGE PROGRESS OF HOMESTEADERS IN CLEARING, BREAKING—ALBERTVILLE-GARRICK AREA, 1941

Years on Farm	Number of farms	Average breaking per year	Cumulative breaking per year
	No.	acres	acres
First	83	2·4	2·4
Second	103	3·6	6·0
Third	111	4·6	10·8
Fourth	114	4·9	15·7
Fifth	117	4·6	20·3
Sixth	119	6·2	26·5
Seventh	118	6·9	33·4
Eighth	113	6·1	39·5
Ninth	110	6·0	45·5
Tenth	98	6·9	52·4
Eleventh	88	4·8	57·2
Twelfth	62	6·7	63·9
Thirteenth	47	8·0	71·0
Fourteenth	27	5·2	77·1
Average	....	5·5	

There is a high proportion of arable land in the Albertville-Garrick area, which developed under a forest cover. It has large sections of relatively level topography and is remarkably stone free. Table 5 summarizes the estimates of arability placed by farm operators on their land.

TABLE 5.—RELATION OF SOIL TYPE TO ACRES OF ARABLE LAND PER QUARTER SECTION, ALBERTVILLE-GARRICK AREA, 1941

Acres of potential arable land per quarter section	Sand to fine sandy loams		Very fine sandy loams to loams		Clay loams to clays		Peat, muskeg and alkali		All soils	
	No.	%	No.	%	No.	%	No.	%	No.	%
0– 29	1	0·9	..	....	..	....	..	....	1	0·2
30– 49	..	....	..	....	1	0·7	..	....	1	0·2
50– 69	2	1·8	1	0·5	..	....	..	....	3	0·7
70– 89	2	1·8	3	1·7	2	1·4	1	8·3	8	1·8
90–109	1	0·9	4	2·3	2	1·4	..	....	7	1·6
110–129	5	4·5	12	7·0	5	3·5	..	....	22	5·0
130–149	10	8·9	19	10·8	8	5·6	1	8·3	38	8·6
150 plus	91	81·2	136	77·7	124	87·4	10	83·4	361	81·9
Total	112	100·0	175	100·0	142	100·0	12	100·0	441	100·0
Per cent		25·4		39·7		32·2		2·7		100·0

Of the 441 quarter sections of land included in the survey 81·9 per cent had a potential arability of 150 acres or more, and 95·5 per cent had a potential arability of 110 acres or more. Between soil groups there were no significant differences.

The largest number of farmers (119) started farming operations in this area with a net worth ranging from $100 to $499. One hundred and ten settlers had between $500 and $1,999 net worth. This situation is not very much different from the usual manner of commencing farming in Saskatchewan. As shown in table 6, most of the settlers have made fairly good progress as measured by their average gain in net worth per annum. There is some relationship between net worth at start and average gain in net worth per annum.

Table 6.—The Relation Between Beginning Net Worth and Total Gain in Net Worth since the Start of Settlement for 304 Farm Operators—Albertville Garrick Survey, 1941

—	Net Worth at Start						
	Less than Zero	Zero net worth	$1–499	$500–999	$1,000–1,999	$2,000–2,999	$3,000 plus
	$	$	$	$	$	$	$
Number of farms	5	36	119	55	55	21	13
Net worth at start	−142	....	201	720	1,354	2,420	4,913
Outside income[1]	313	75	258	163	206	348	917
Total	171	75	459	865	1,560	2,768	5,830
Net worth 1941	1,087	2,778	2,458	3,266	3,718	5,006	7,073
Changes in net worth	916	2,703	1,999	2,401	2,158	2,238	1,243
Years on farm	6·2	12·7	10·2	10·8	8·0	9·3	7·5
Average gain per annum	147	213	196	223	269	240	165

[1] This "outside income" is income derived from non-farm sources such as gifts, legacies, life insurance benefits, and so forth, and is a deduction from present net worth in order to arrive at the gain in net worth due to farming operations alone.

The present net worth of settlers is shown in table 7 for owners only, according to the size of farm (acres of cropland). These are estimates placed on the operator's assets by the settler with due regard to long time values. It will be noted that the average value of real estate was $2,146 or $11.92 per occupied acre with 77 acres of cropland. This amounts to about $1,900 per quarter section. The value of real estate increased per occupied acre with increases in acres of cropland. Farm indebtedness was not high. In most cases indebtedness is made up mainly of relief and re-establishment obtained through the Northern Settlers' Re-Establishment Branch of the Provincial Department of Municipal Affairs. The ratio of farm indebtedness to assets is highest for the farms with less than 50 acres of cropland.

Table 7.—Present Net Worth of Farm Owner-Operators by Size of Farm, Albertville-Garrick Survey, 1941

—	Owners—acres cropland				Average all farms
	0–49	50–99	100–199	200 plus	
	$	$	$	$	$
Number of farms	58	112	50	8	228
Average acres cropland	33	70	120	237	77
Farm real estate	1,322	2,073	2,852	4,713	2,146
Value of live stock	341	459	658	680	480
Value of equipment	209	469	1,002	2,081	576
Value of feeds, supplies, seed	84	146	282	669	178
Other assets	196	347	526	1,599	392
Total assets	2,152	3,494	5,320	9,742	3,772
Total liabilities	673	738	858	2,239	801
Present net worth	1,497	2,756	4,462	7,503	2,971
Average value of real estate per acre of cultivated land	40·56	29·74	23·81	19·89	27·82
Average value of real estate per occupied acre	8·60	12·18	14·23	12·42	11·92
Debt per acre of cultivated land	20·67	10·58	7·16	9·45	10·38
Total acres	154	170	200	379	180
Per cent improved	22·6	42·5	61·3	63·1	44·3
Debts as percentage of assets	31·3	21·1	16·1	23·0	21·2

Even the farms in this group are within the percentage of 33·3 which is considered a relatively safe margin on Saskatchewan farms.

The financial summary for the year May, 1940, to April, 1941, for farms in each soil group is shown in table 8.

TABLE 8.—FINANCIAL SUMMARY BY SOIL TEXTURAL GROUPS—ALBERTVILLE-GARRICK AREA, 1941

	Podzolized and Degraded Soils			
—	Peats and alkali	Sand to fine sandy loams	Very fine sandy loams to loams	Clay loams to clays
	$	$	$	$
Number of farms	7	73	119	104
Farm capital:				
Real estate	2,138	2,367	2,828	2,885
Live stock	400	436	476	480
Machinery and equipment	814	536	741	773
Feed, seed and supplies	108	161	195	242
Total	3,460	3,500	4,240	4,380
Receipts:				
Cash receipts	720	790	1,006	1,222
Increase of capital	251	321	365	514
Total	971	1,111	1,371	1,736
Expenses:				
Decrease of capital	130	91	174	140
Farm expenses	404	392	478	490
Capital expenditures	152	230	252	455
Total	686	713	904	1,085
Farm income	285	398	467	651
Interest at 5 per cent	173	175	212	219
Labour income	112	223	255	432
Net income	−61	133	154	267
Average number of years on farm	6·1	9·6	10·6	12·2

Farms located on better soil types have higher net incomes than those on the peats, alkali and sand to fine sandy loams as would be expected. Net income is defined as the "surplus" available to the farm operator after all operating expenses, living expenses and maintenance of farm capital are taken care of. The early farmers settled on better types of soil, as shown by the number of years on the present farm.

Farm receipts on farms located on peats and alkali were mainly derived from live stock, wheat and alfalfa in the respective order named. Wheat receipts were highest on the clay loam to clay farms and alfalfa on the peat to alkali group. Live stock receipts were highest on the peat to alkali group. Non-farm receipts were highest ($125 per farm) on the farms located on sand to fine sandy loams and only $19 per farm on the peats and alkali. These non-farm receipts were mainly sales of cordwood, non-farm labour, pensions and trapping. Custom work was the largest item of farm expenses on all soil groups. This item was made up of threshing, combining, hiring for field work and trucking. Increases of capital are shown for all soil groups, due mainly to new breaking, new machinery and equipment and live stock increases.

The level of living as measured by cash living expenses per adult month in the Albertville-Garrick area is approximately the same as in the Weyburn-Estevan district which is in the southeast part of the province. It would seem that the level of living in the Albertville-Garrick area is equal to the level on half and three-quarter section farms on the prairies. This does not take into account the substantial amounts of farm produce used on the farm and the wood used for fuel on these northern farms. The present level of living, however, is considerably below the conception of a reasonable standard of living for a livelihood on Northern Saskatchewan Pioneer Farms.

PROFITABLENESS OF HOG PRODUCTION IN THE BEAR LAKE DISTRICT OF ALBERTA

Elizabeth Low

With war has come a greatly increased demand for agricultural produce. For 1943, among other things farmers have been asked to step up their hog production. Some of the increase will come from districts ordinarily recognized as live stock areas, but some will necessarily come from districts which have, in the past, been mainly grain-growing areas. Has hog raising proved profitable? The question is pertinent to the hour, and may in part be answered by the experience of farmers in the Bear Lake district of Alberta.

Bear Lake district of Alberta Peace River Block is typically a mixed farming area with live stock second to wheat in importance. It is located west of Grande Prairie, and north and south of Wembley. It is one of the most highly developed districts of the Peace River Block. The country is typically parkland and the fertile soil and level to undulating topography are favourable for grain production. Recently, however, the farmers have diverted more of their energy to production of live stock, especially hogs. A comparison of returns from raising hogs with returns from raising cash wheat is available from information assembled in an economic survey of farm business conducted in 1942[1].

A random sample of 90 farms was studied. These farms were divided into three groups on the basis of hogs per 100 acres of cultivated land, the number being the total of hogs on hand and hogs sold during the year. The group "low in hog production" included farms having less than 7 hogs per 100 acres; and of the 33 farms 11 had no hogs. The next group or "medium in hog production" included farms having 7 to -14 hogs per 100 acres. The "high in hog production" group was made up of farms with 15 or more hogs per 100 acres of cultivated land. The distribution of the 90 farms by these categories, average size, acres of wheat, and numbers of productive live stock, appears in table 1.

Table 1.—Size of Farm, Acres of Wheat and Live Stock Numbers by Groups, According to Importance of Hogs, Bear Lake District, Alberta, 1941–42

—	Importance in hog production		
	Low	Medium	High
Number of farms	33	28	29
Average size in cultivated acres	330	302	222
Acres wheat, 1941	123	121	62
Numbers per farm:			
Sows on hand May 1, 1942	1·9	3·8	5·3
Other hogs on hand, May 1, 1942	0·4	8·5	18·8
Hogs sold May 1, 1941–May 1, 1942	6·2	21·1	44·9
Cows on hand, May 1, 1942	2·8	4·1	3·5
Other cattle on hand, May 1, 1942	2·5	3·9	4·3
Cattle sold May 1, 1941–May 1, 1942	1·6	1·4	2·0

In size, the typical farm in this area was one-half section, with individual farms varying from one-quarter section to a section. On an average the farms producing the most hogs were those with the least cultivated acreage. Wheat and oats were the main crops grown; wheat acreage averaged lowest where hog production was highest. Farmers have also been urged to increase the production of beef cattle. In this district the winter feeding period is so long that hogs are more favoured than cattle; consequently cattle raising is not as common as hog raising. Farmers who were raising more hogs than their neighbours had a few more cattle, but the difference was relatively small.

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[1] One of five districts of the Peace River area covered in an Economic study of land settlement conducted by the Economics Division, Dominion Department of Agriculture, in co-operation with the Department of Political Economy, University of Alberta.

Receipts are an item of great importance to a producer.

TABLE 2.—MAIN SOURCES OF FARM RECEIPTS, OPERATOR'S LABOUR EARNINGS, AND GAIN IN NET WORTH FOR THE YEAR ENDING MAY 1, 1942, BEAR LAKE DISTRICT, ALBERTA

—	Importance in hog production		
	Low	Medium	High
Number of farms	33	28	29
	$	$	$
Hog receipts	116	412	846
Cattle Receipts	96	89	107
Crop receipts	1,122	803	465
Average labour earnings	−37	242	864
Gain in net worth	−384	−59	429

It is natural that hog receipts should be greater on farms which emphasize hog production and crop receipts smaller on these farms than on farms emphasizing crop production (table 2). But these receipts do not necessarily mean greater net earnings on hog farms. To measure the latter "Labour Earnings" is used.

"Labour Earnings" is the return to the operator after deducting an interest charge for use of capital and adding an allowance for use of house and farm products consumed by the farm family. The Labour Earnings increased markedly from an average of $37 for the "low" group to $864 for the "high" group.

The difference in the returns from the farms with high production of hogs compared with those low in hog production may be measured in another way—that is by the change in the financial situation during the year, or net worth.

Net worth is the excess of assets over liabilities and if computed at the beginning and also at the end of the year the difference gives the change for the year. The "high" hog producers showed a gain of $429 in net worth during the year, while the "low" hog producers had a decrease of $384. The low hog producers either sold assets to pay current bills or did not replace worn assets.

TABLE 3.—AVERAGE CAPITAL, MAY 1, 1942, AND LABOUR USED DURING YEAR MAY 1, 1941–MAY 1, 1942, BEAR LAKE DISTRICT, ALBERTA

—	Importance of hog production		
	Low	Medium	High
Number of farms	33	28	29
	$	$	$
Real estate, May 1, 1942	9,011	8,662	6,263
Live Stock, May 1, 1942	977	1,233	1,323
Equipment, May 1, 1942	2,585	2,467	1,426
	No.	No.	No.
Average months of labour used during year	17·8	18·2	18·0

The farms which had the most hogs also had the least capital investment (table 3); thus in the production of hogs compared with wheat, capital was used more efficiently.

In these days the labour supply is a problem and farmers must use it to their best advantage. Those operators who raised the most hogs used little more labour than did those who were "low" in hogs. The labour was used more economically and for the same effort applied, greater returns were obtained.

Although this district was mainly a grain-growing area, the operators who have gone more heavily into hogs in recent years have not suffered but have actually profited by the change. Compared with those who have not gone into hogs to the same degree they have earned greater returns with less capital and practically the same labour.

FACTORS IN THE MILL FEED SITUATION

The increased production of live stock and live stock products in Canada has begun to press on the available supply of animal feeding stuffs. While there are large supplies of grain in Western Canada the traffic resulting from war conditions will not allow an absolutely free movement of grains on the transportation systems. To some extent this large supply is not available to Eastern feeders.

The increasing demand for feedstuffs is particularly evident in the mill feed trade. In 1939 some 641 thousand tons of mill feeds were produced in Canada.[1] By 1942 the production had increased to 704,000 tons, an increase of 10 per cent.[2] Of the 1939 production about 451 thousand tons were exported, leaving a net supply of 390 thousand tons. The demand situation was foreseen for 1942 and exports were severely restricted, about 9 per cent of the total production leaving the country. The effect of export control was to make about 647 thousand tons available to Canadian farmers during 1942, an increase of 66 per cent between the two years (1939 and 1942). The favourable price for mill feeds in relation to grains, and the increase in live stock numbers created such a demand that the large 1942 supplies were not adequate in many areas.

The exports which were permitted during 1942 were based on the export of flour to the non-sterling countries of the Western Hemisphere. For each barrel of flour sold in these areas millers were allowed to export a proportionate amount of mill feeds to the United States. The higher prices prevailing in this latter country enable Canadian millers to compete in sales of flour with American companies milling Canadian wheat in bond and selling the mill feed at United States prices while exporting the flour. Since the production of mill feeds is dependent upon a market for flour, it is understandable that mill feeds exported under the 1942 program do not affect the Canadian situation. If the export of mill feeds against non-sterling flour deliveries were not allowed the flour would not be milled because it could not be sold in competitive markets.

One further consideration is the place of mill feeds in the total feed situation. For certain types of farming bran, shorts and middlings are important elements because they bulk large in the purchased feeds of the area. In some cases they may amount to 25 or 30 per cent of feed that the farmers buy. Of the 7·3 million tons of grain and grain products moved from the West under the Freight Assistance policy 31 per cent, by weight, was mill feeds. However, considering all the grain and grain products consumed on Canadian farms the importance of mill feeds becomes relatively unimportant in the national situation. In the crop year 1941-42 mill feeds were only 5·7 per cent of the total feed ration. While they are in short supply a change to wheat on the part of some farmers would ease the situation without materially affecting the national feed supplies.

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[1] Adapted from "Canadian Milling Statistics," Dominion Bureau of Statistics.

[2] "Canadian Coarse Grains," Vol. 2, Dominion Bureau of Statistics.

A COMPARISON OF FARMS IN THE GRANDE PRAIRIE DISTRICT OF ALBERTA 1930 AND 1942

B. K. Acton

Two economic studies have been made of farming in the Peace River country; one in the summer of 1930 and the other in the summer of 1942. The results of the 1930 survey were published under the auspices of the Canadian Committee on Pioneer Problems.[1] This study was part of a larger one on "Canadian Frontiers of Settlement" and was carried on by a committee of which Professor W. A. Mackintosh of Queen's University was Chairman, and in which the Economics Division, Dominion Department of Agriculture, co-operated. In 1942, the Economics Division, in co-operation with the University of Alberta, undertook a study of farming in the Peace River area. The chief object of this project was to assemble factual material pertinent to the determination of the growth and financial progress of this settlement and associated problems.

The procedure adopted was to select farmers at random and interview them regarding their farm organization and business operations and record this information on specially prepared blanks. Through the courtesy of Professor Mackintosh and Dr. Dawson, the original records taken in 1930 were placed at the disposal of the Economics Division. In 1942 eighteen of the 1930 co-operators in this district were visited again, making it possible to compare these farms at two different points of time. While the record forms used for the two surveys were not identical, they were sufficiently alike to permit a comparison of the salient characteristics of the farm organization and the operating statements of 1942 with those of 1930.

The eighteen farm co-operators for both surveys were located in the Grande Prairie District. This district lies north of the Wapiti River and between the town of Grande Prairie and a point twenty miles southwest of Beaverlodge. It is a parkland country, the soil being dark in colour and of a clay loam texture, with gently rolling topography. There was not a tree on many sections of land at the time of original settlement. Bush cover was not a factor in establishing productive farms.

The first general influx of homesteaders into the Peace River country occurred about 1910. By 1930 the farms in the Grande Prairie district were well developed. The permanent improvements on these farms to-day give them an appearance of prosperity equal to the farms in any rural community of the province.

The type of agriculture practised in the district may be described as mixed farming with emphasis on grain production. Due to the long winters hogs are raised in preference to cattle. Dairy produce is marketed at two creameries in the area. Tractors and horses both are important in providing farm power, and the land should be summerfallowed one year in three in order to combat weeds and permit maximum utilization of moisture.

The general price level of the two periods, as published by the Dominion Bureau of Statistics, is also different. The indexes of all commodities and farm living costs for Canada were higher in 1942 than in 1930, while the indexes of farm and field products were lower. The index of animal products was practically the same in the two periods. Because of the isolated position of the Grand Prairie district the index may not be absolutely accurate for this area, but it is believed the general trend would be similar.

Although the two studies were made in the summers of 1930 and 1942 the data on the records were secured for the business year May 1, 1929, to April 30,

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[1] Dawson, C. A., and Murchie, R. W., "The Settlement of the Peace River Country," MacMillan, 1934.

1930, and May 1, 1941, to April 30, 1942. Actually the records refer to the crop seasons of 1929 and 1941 and these figures will be used in the tables to follow.

Tenure, Size of Farm and Land Use.—The co-operators were all land owners, but a few rented adjacent parcels of land, thus increasing the size of the farm unit. In 1930 three of the eighteen operators rented additional land, while in 1942 this number had increased to seven.

In total acres the average size of farm at the end of the twelve-year period was less than in 1930, but the average improved acreage was considerably greater. Of particular importance is the fact that during 1929 an average of 34 acres per farm were broken out. Although the farms were well established at this time, there was still virgin land to be brought into production. By 1941, the amount of new breaking was negligible.

TABLE 1.—AVERAGE SIZE OF FARM AND CROPS GROWN ON EIGHTEEN GRANDE PRAIRIES FARMS, 1929 AND 1941

—	1929		1941	
	Acres	Per cent of total acres	Acres	Per cent of total acres
Average size of farm	419	....	391	....
Acres improved	176	42	263	67
Acres wheat	40	10	61	16
Acres oats	63	15	85	22
Acres breaking	34	8	1	....

The additional improved acreage was sown to wheat and oats. There was a somewhat higher proportional increase in the acreage of wheat than in the acreage in oats.

Farm Receipts.—There was only a few dollars difference in the gross farm receipts of the two periods, thus indicating stability of agriculture in the Grande Prairie district. Income from grain and farm produce sales decreased while stock sales increased.

TABLE 2.—AVERAGE FARM RECEIPTS OF EIGHTEEN GRANDE PRAIRIE FARMS, 1929 AND 1941

—	1929		1941	
	$	%	$	%
Crop sales	1,572	71	1,368	63
Stock sales	408	19	491	22
Farm produce	112	5	55	3
Other	112	5	274	12
Total	2,203	100	2,188	100

Lower grain prices in 1941 accounted for the reduced income from grain sales, since there was an increase in acreage and yields were about the same. Actually the average yield of wheat per acre reported in 1929 was 27 bushels, while in 1941 it was 25 bushels.

Expenses.—Average cash operating expenses were $43 more in 1941 than for the earlier period. This sum is not significant, with the total for this item approximately $900. However, the capital expenditures were about twice as great in 1929 as for the latter period. Capital improvements such as new breaking and new buildings account for the larger expenditures in 1929.

TABLE 3.—AVERAGE CURRENT CASH OPERATING EXPENSES, AND AVERAGE CAPITAL EXPENDITURES OF EIGHTEEN GRANDE PRAIRIE FARMS, 1929 AND 1941

—	1929	1941
	$	$
Current cash farm operating expenses (less board of paid labour)	868	911
Capital expenditures	1,011	545

Cash living costs were lower in 1941 than in 1929 for these eighteen farm families. They also placed a lower value on the farm products raised on the farm and consumed in the home (perquisites). The lower cash living costs might possibly be explained by the improvement of the transportation and retail facilities in the Grande Prairie area, bringing about a reduction in the cost of consumer goods in an isolated community. However, it would be expected that such an improvement with a consequent increase in greater local demand would raise rather than lower the value of perquisites. The lower estimated values placed on these may be due to a more conservative attitude in 1942 compared with the optimism of the late "twenties." The full force of the depression had not been felt by the summer of 1930.

TABLE 4.—AVERAGE LIVING EXPENSES OF EIGHTEEN GRANDE PRAIRIE FARMS, 1929 AND 1941

—	1929	1941
Number of adult months	35	37
	$	$
Total cash board	372	248
Total cash board per adult month	11	7
Total value of perquisites	496	373
Total value of perquisites per adult month	14	10

Comparison of Average Farm Assets.—The changed attitude of the cooperators due to the influences just noted in the foregoing may be reflected in the estimated values which they placed on their assets in the two periods of enumeration. These are given in table 5.

TABLE 5.—STATEMENT OF AVERAGE ASSETS OF EIGHTEEN GRANDE PRAIRIE FARMS, 1929 AND 1941

—	1929		1941	
	$	%	$	%
Real estate owned	10,502	79	6,703	69
Live stock	1,454	11	1,162	12
Equipment	1,391	10	1,859	19
Total	13,347	100	9,724	100

In part the lower values placed on real estate in 1942 are the result of a slightly smaller acreage per farm; but probably a more important reason is the fact that 1929 values were estimated at the beginning of the depression, whereas those of 1941 were made after a long period of low prices, although some improvement had already taken place. Live stock on hand decreased in value, principally because of reduced numbers of cattle and hogs. Greater mechanization brought about an increase in the value of farm equipment over the twelve-year period.

It will be noted from table 5 that the farm assets represent a considerable capital investment. This would indicate that these farms are well established and far removed from the pioneer stage.

Conclusion.—The comparative data presented suggest that farming in the Grande Prairie area has reached a fairly stable stage and a definite type of agriculture has been established.

A comparison of the operating statements in the two periods indicates a marked degree of similarity in the sources and amounts of farm receipts and cash operating expenses. In regard to capital expenditures, the period of capital costs for the development of farm land has been passed.

Cash living costs were lower in the later period, suggesting that goods that must be purchased may be procured at prices comparable to those ruling in older established communities.

NOTES

To meet the shortage of feed in Eastern Canada during the winter months, the government will provide further assistance. One plan will include the rebate of accumulated charges on feed which dealers have brought to Eastern Canada and hold in reserve for distribution during the winter months and released upon the authority of the Feeds Administrator. Increased freight assistance payments will be available to encourage the early movement of feed growers. These payments are graduated by months, more assistance being available on shipments in July and August than for those in November and December.

First official estimates of wheat and barley harvestings in Egypt indicate a record acreage. The wheat acreage now being harvested is placed at 1,990,000 acres as compared with 1,636,000 acres last year and the previous high of 1,655,000 in 1927. The barley acreage is estimated to be 435,000 acres, about 30 per cent larger than the above average 1942 acreage. The increased grain acreage implies the success of the Egyptian Government's policy of making a substantial shift from cotton to food crops.

Exports of all important edible vegetable oils normally produced in Argentina have now been prohibited to assure sufficient supplies for domestic consumption. Sunflower seed and oil exports were prohibited on May 6. Exports of peanuts, cottonseed, rapeseed and their corresponding oils were prohibited on June 1. These four crops supply the raw materials for virtually all of the edible vegetable oil produced in Argentina.

The Bureau of Statistics reports the relative areas of late sown crops and hay compared with those in 1942 as follows: Peas, 8 per cent decrease; beans, 12 per cent decrease; buckwheat, 10 per cent increase; corn for husking, 13 per cent decrease; turnips and other field roots, 8 per cent decrease; hay and clover, no change; alfalfa, 6 per cent decrease; fodder corn, 10 per cent decrease; sugar beets, 10 per cent decrease.

The Wartime Prices and Trade Board announced on July 16 that increased supplies of farm machinery would be available during the next twelve months. The order provides for a tonnage equal to 77 per cent of the average output 1940-41. It also provides for repairs on the basis of 156 per cent of the 1940 and 1941 average output. Certain types of equipment such as bee hives, hog troughs, poultry and live stock feeders, are exempted from restriction provided they are made of non-essential materials.

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THE ECONOMIC SITUATION

At the end of four years of war, an appraisal of economic conditions in Canada indicates that despite the sharp increase in national income accompanied by industrial expansion and decreased unemployment, the increase in wholesale prices and the cost of living have been up to the present kept within moderate limits. However, with production at or approaching peak levels, the danger of inflation remains very real.

At September 1 the cost of living index was reported by the Dominion Bureau of Statistics at 119·4, compared with 119·2 at the first of August. The increase during August was accounted for mainly by foods, home furnishings and transportation. The wartime increase in this index has been 18·5 per cent.

The index of wholesale prices, after finally rising above 100 (1926 base) in July, continued on to an average of 100·4 for August. Farm products advanced from 96·4 to 97·5, as field products increased from 82·6 to 84·7 and animal products decreased from 119·4 to 118·6. Wheat, long a depressing factor in the farm products index, in September began to move upward, thus compensating for seasonal declines in live-stock prices.

On September 28 the Minister of Trade and Commerce announced the suspension of futures trading on the Winnipeg Grain Exchange. The initial payment for wheat has now been raised by 35 cents per bushel to $1.25 for No. 1 Northern, basis in store Fort William with the Wheat Board taking charge of all deliveries. New coarse grain payments have also been announced, with western farmers receiving 15 cents per bushel for barley and 10 cents per bushel for oats at time of delivery to country elevators. These additional payments represent guaranteed initial advances against equalization fees being collected by the Wheat Board on grains exported to the United States. This arrangement is expected to facilitate the movement of feed grains from West to East. The ceiling prices for oats and barley remain unchanged at 51½ cents and 64¾ cents per bushel respectively. The fixed price for flaxseed has also been raised to $2.50 per bushel, an increase of 25 cents.

Summary of Economic Conditions, January to August.—The trend of various economic indexes during the first eight months of 1943 indicated a further advance over the same period of 1942, although some lines of output have apparently reached peak levels.

The physical volume of business index averaged 233 from January to August this year compared with 198 in the same period last year, or a gain of 17·6 per cent. The index of manufactures showed a sharper advance, averaging 288·5 as against 233·6 or a gain of 23·5 per cent. Mineral production recorded an advance of 24 per cent during the first 8 months of the year compared with 1942. In the same period, on the other hand, total construction contracts awarded were $43,000,000 less than in the same period a year ago. With respect to internal trade, the indexes of wholesale and retail sales showed increases of 7 per cent and 5 per cent respectively over 1942 figures. Export trade, reflecting heavy shipments of war material, showed a gain of 27 per cent, totalling $1,890 millions, as against $1,485 millions in the first 8 months of 1942. Import trade showed only a moderate advance.

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ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Living Costs and Production Indexes Computed by Dominion Bureau of Statistics: Index of Industrial Wage Rates Published by Department of Labour

Year	Wholesale Prices 1926=100				Retail Prices		Production and Wages 1926=100		
	All commodities (1)	Farm products (2)	Field products (3)	Animal products (4)	Urban Living Costs 1935-1939 =100 (5)	Farm Living Costs 1935-1939 =100 (6)	Physical volume of business (7)	Industrial production (7)	Industrial wages rates (8)
1913....	64·0	64·1	56·4	77·0	79·7	79·6	....	....	53·7
1914....	65·5	70·2	65·4	78·3	80·0	82·0	....	....	54·4
1915....	70·4	77·9	76·9	79·5	81·6	86·3	....	....	54·8
1916....	84·3	89·8	88·8	91·4	88·3	93·6	....	....	58·8
1917....	114·3	128·5	134·5	118·4	104·5	111·6	....	....	67·4
1918....	127·4	132·6	132·0	133·6	118·3	131·4	....	....	78·0
1919....	134·0	146·7	142·6	153·5	130·0	143·0	71·3	65·5	93·1
1920....	155·9	160·6	166·5	150·8	150·5	170·7	75·0	69·9	111·5
1921....	110·0	103·7	100·3	109·5	132·5	139·5	66·5	60·4	101·9
1922....	97·3	88·0	81·4	99·0	121·3	127·5	79·1	76·9	96·7
1923....	98·0	81·5	73·3	95·1	121·7	127·9	85·5	83·8	98·9
1924....	99·4	88·1	82·7	97·2	119·5	125·1	84·6	82·4	100·1
1925....	102·6	101·0	98·2	105·6	120·6	123·6	90·9	89·7	99·4
1926....	100·0	100·0	100·0	100·0	121·8	120·9	100·0	100·0	100·0
1927....	97·7	102·1	99·9	105·7	119·9	119·5	106·1	105·6	102·2
1928....	96·4	100·7	92·6	114·3	120·5	118·3	117·3	117·8	103·2
1929....	95·6	100·8	93·8	112·5	121·7	117·4	125·5	127·4	105·2
1930....	86·6	82·3	70·0	102·9	120·8	113·7	109·5	108·0	105·8
1931....	72·1	56·3	43·6	77·6	109·1	103·7	93·5	90·4	101·5
1932....	66·7	48·4	41·1	60·7	99·0	97·7	78·7	74·0	95·4
1933....	67·1	51·0	54·8	59·7	94·4	95·7	79·7	76·8	90·3
1934....	71·6	59·0	53·8	67·7	95·7	97·8	94·2	93·6	91·5
1935....	72·1	63·5	57·3	74·0	96·2	97·9	102·4	103·3	94·1
1936....	74·6	69·4	65·8	75·3	98·1	98·3	112·3	114·4	95·9
1937....	84·6	87·1	88·3	85·0	101·2	102·8	122·8	120·8	102·9
1938....	78·6	73·6	69·0	81·3	102·2	101·9	112·9	114·6	106·0
1939....	75·4	64·3	54·2	81·2	101·5	99·4	122·4	125·6	106·4
1940....	82·9	67·1	55·9	85·2	105·6	108·6	145·4	156·1	109·1
1941....	89·9	71·2	56·5	95·8	111·8	114·2	135·6	148·6	119·9
1942....	95·6	82·5	66·5	109·2	116·8	119·2	....	....	....
							1935-39=100		
							201·7	227·2	
1942									
April...	95·0	81·4	65·0	108·9	115·9	118·4	198·1	220·8	....
May....	95·2	80·2	65·5	104·8	116·1	....	195·5	217·3	....
June....	95·8	81·5	66·3	107·0	116·7	....	200·0	222·1	....
July....	96·1	81·1	67·7	103·5	117·9	....	203·7	229·4	....
Aug.....	95·5	81·3	68·4	103·0	117·7	....	205·7	232·5	....
Sept....	95·8	84·3	67·6	112·2	117·4	119·9	206·1	235·1	....
Oct.....	96·6	85·7	67·9	115·5	117·8	....	207·2	238·6	....
Nov	97·0	86·5	68·4	116·7	118·6	....	207·8	239·3	....
Dec	97·0	87·1	69·0	117·3	118·8	....	221·2	250·8	....
1943									
Jan.....	97·1	87·6	70·6	116·2	117·1	....	225·8	254·6	....
Feb	97·5	88·5	71·6	116·8	116·9	....	227·3	267·8	....
Mar.....	98·5	91·2	75·4	117·6	117·2	....	231·7	269·1	....
April ...	98·9	92·3	76·8	118·2	117·6	121·1	236·9	274·4	....
May....	99·2	92·8	77·4	118·7	118·1	....	231·8	267·8	....
June.....	99·5	94·4	79·4	119·4	118·5		232·4	267·2	
July.....	100·1	96·4	82·6	119·4	118·8	....	236·3	270·2	....
Aug......	100·4	97·5	84·7	118·6	119·2	....	241·0	276·8	....
Sept.....	101·2	97·9	86·1	117·6	119·4		236·7	280·9	

1. See Prices and Price Indexes 1913-1928, pp. 19-21, 270-289 and 1913-1939, p. 17.
2. Wholesale prices of Canadian products of farm origin only. See prices and Price Indexes 1913-1937 p. 52, and Monthly Mimeographs 1942-43.
3. Wholesale prices of grain, fruits and vegetables.
4. Wholesale prices of animals and animal Products.
5. See An Official Cost of Living Index for Canada, 1940.
6. Index numbers of Farm Family Living Costs 1913-38 and Farm Living Expenditures 1934 and Farm Family Living Costs mimeograph.
7. Monthly Review of Business Statistics, p. 8, and Monthly Indexes of the Physical Volume of Business in Canada, supplement to the monthly Review of Business Statistics, November, 1932. Yearly index numbers for 1942, subject to revision.
8. Department of Labour, *Labour Gazette,* January 1942.

The general employment index averaged 182 from January through August, 1943 compared with 169 a year ago, or a gain of 7·5 per cent. Undoubtedly a sharper gain would have been recorded if more manpower had been available for various industries.

Due to the seasonal nature of agricultural production, current barometers of output cannot be so readily compiled as for manufacturing industries. In 1943 to date however, total live-stock slaughterings have been higher than in 1942, dairy production has been well maintained and egg production has shown a substantial increase. The 1943 harvest was less bountiful than 1942, particularly in Eastern Canada, but grain reserves for the Dominion as a whole are ample.

Progress on Production Objectives.—As the year progresses, it is becoming possible to appraise the degree of success Canadian farmers will attain in meeting the various production objectives established at the Dominion-Provincial Conference last December. At that time emphasis was placed on the production of live stock and live-stock products, together with the feed grains necessary to produce the live stock required.

With respect to meat animals, the 1943 objectives called for a 28 per cent increase in hog marketings, a 9 per cent increase for cattle with a slight decrease for calves, and a 12 per cent increase for sheep and lambs. It now appears that the over-all objective for meat production in 1943 may not be reached, but output may be about 10 per cent larger than in 1942. Consumer rationing and other restrictions placed on the distribution of meats in the domestic market have enabled good progress to be made on export bacon commitments despite smaller over-all supplies of meat than designated in objectives.

The goals for dairy products called for a 6 per cent increase in total fluid milk production, and there are indications that 1943 production may not fall far short of the objective. However, due to a substantial increase in creamery butter production and higher consumption of milk in the fluid state, production of cheese has not been maintained at sufficiently high levels to meet in full the export contract for 150 million pounds although it has been found possible to partially compensate for this deficiency by exports of butter to the United Kingdom.

Commercial chick hatcheries reported record business this season, and egg production has been heavy. The objective called for an increase of 29 per cent, considered necessary to meet export contracts for powdered eggs equivalent to 63 million dozens. In view of heavy domestic consumer demand it is not considered likely that this contract can be met in full, although export deliveries have been encouraging.

As reported earlier, the 1943 acreage sown to wheat and coarse grains was fairly well in line with suggested objectives. While the 1943 harvest failed to measure up to the bumper crops of 1942, a reasonably good yield has been reported in most areas of Western Canada, and generally speaking harvesting conditions were better than a year ago. Eastern Canada experienced a freak season, and spring crops customarily sown early suffered heavily. The first estimate of the 1943 wheat crop was released by the Dominion Bureau of Statistics on September 10 and placed the crop at 296 million bushels, which was 50 per cent of the 1942 crop, and the smallest since 1937. With respect to coarse grains, the 1943 oat crop was 152 million bushels smaller than the 1942 harvest while barley showed a reduction of only 36·5 million bushels.

Other crops for which first estimates of total yield have been made show flaxseed with an increase of 18 per cent, sugar beets decreased by 26½ per cent, corn for husking with a decrease of 27 per cent, field beans a decrease of 8 per cent and potatoes an increase of less than 1 per cent.

ACCORDING TO THE CENSUS—

J. Coke and F. Shefrin

This article is based on preliminary reports and releases of the Demography Branch, Dominion Bureau of Statistics, and outlines some of the changes in Canadian agriculture particularly during the decade 1931 to 1941.

In any discussion of the Census data, it is necessary to keep clearly in mind the specific meaning of a farm:—

> A Farm, for Census purposes, is all the land located in one municipality which is directly farmed by one person conducting agricultural operations, either by his own labour, or with the assistance of members of his household or of hired employees. It may consist of a single tract of land, or of a number of separate tracts held under different tenures. In order to be reported as a farm, such land must be of one acre or more in extent and have produced in 1940, agricultural products to the value of $50 or more, or be under crops or employed for pasture in 1941.[1]

It is important to point out that since the 1941 Census was taken, farms have undergone considerable change because of the tremendous impact of the war. It is probable, therefore, that some of the changes indicated by the 1941 census data now have been modified or intensified.

Population.—During the ninety years, commencing with 1851, Canada's total population has grown from 2,436,297 to 11,506,655. The most rapid expansion was in the 30-year period between 1891 and 1921, when an increase of 3,954,710 took place. In the early days Canada was essentially rural; in 1851, 86·9 per cent of the people were on farms or in small scattered communities. Farming was, in most cases, a part-time occupation.

But with the building of railroads, the discovery of material resources accelerated industrial development and expansion of markets, Canada's population became more and more urban and by 1941 it was predominantly urban—6,252,416 or 54·3 per cent of the total population being resident in incorporated cities, towns and villages.

The farm population, which was 31·7 per cent of the total in 1931, declined to 27·5 per cent by 1941. The greatest percentage declines occurred in the Maritime Provinces. Saskatchewan has the highest proportion of population engaged in agriculture with 57·4 per cent of its population living on farms. Prince Edward Island and Alberta ranked second and third. In the Province of Quebec, only one-quarter of the people live on farms. British Columbia and Ontario are the most urbanized provinces in Canada with only 13·0 per cent and 18·5 per cent respectively, of their populations being on farms.

Land in Farms.—The amount of occupied farm land in Canada has increased consistently as far back as records go. During the 20 years from 1921 to 1941, it increased from a total of 141 million acres to 175 million acres.

In studying the percentage of total land in farms in 1941 by provinces, it may be observed that in Prince Edward Island 83·9 per cent of the land was in farms and along with Nova Scotia and New Brunswick has less land in farms than in 1921. In Saskatchewan, 39·4 per cent was in farms as compared with 28·9 per cent in 1921. British Columbia, Quebec, and Ontario have only 1·8 per cent, 4·4 per cent and 9·6 per cent of their total land areas in occupied farms. This should not lead to the conclusion that the remainder is suitable for cultivation for much of it is not. In Saskatchewan and Alberta more land was brought into occupied farms than in all of the other provinces combined during the twenty-year period.

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[1] Census of Agriculture, Eighth Census of Canada 1941.

Number of Farms.—The number of farms as classified by the Census, increased from 728,664 in 1931 to 732,715 in 1941. In the Maritimes and Ontario there was a decrease in the number of farms. This reduction may be partly explained by a difference in the method of enumerating "non-resident" farms in the 1941 Census. Where the resident and "non-resident" farms of the operator lie in the same municipality or Census sub-division, they were combined, thereby decreasing considerably the actual number of farms. In previous censuses, each parcel of land in an enumeration area was counted as one farm but this duplication was only in the number of farms and not in their areas. The increase in Quebec is due partly to expansion in new areas and to sub-divisions in older areas. Therefore, the small increases in the Prairie Provinces and the substantial increase of 18,672 farms from 135,957 to 154,629 in the Province of Quebec are greater than the actual figures would indicate.

Size of Farms.—Between 1931 and 1941, the percentage of farms of 201 acres and over increased by a little over one per cent, whereas farms of 50 acres and under decreased by two per cent. This, however, is part of a trend towards larger sized farms, and is reflected in all the provinces with the exception of Quebec. In that province the number of farms over 200 acres decreased during the census decade from 14·4 per cent to 11·5 per cent. On the other hand, farms between 51 and 100 acres increased from 32·3 per cent to 39·1 per cent.

The provinces of Saskatchewan and Alberta have the largest average size farms. In both provinces the average is 433 acres. Over a twenty-year period in Saskatchewan, the average size of farm has increased approximately 17 per cent. Whereas in Alberta the increase was 22 per cent. Among the eastern provinces, Nova Scotia experienced the greatest increase in size of farm, the average acreage rising from 99·6 acres in 1921 to 116·9 acres in 1941, an increase of over 17 per cent. Prince Edward Island has the smallest farms averaging 95·9 acres.

It is interesting to note that in the Province of Quebec, the number of farms have increased, but average size per farm has decreased.

It is noteworthy that in Canada 21·7 per cent of the farms were from 51 to 100 acres in 1941 whereas 30·7 per cent were in this size group in 1901; a little over 31 per cent were between 101 and 200 acres in 1941 compared with 29·5 per cent in 1901. Almost 32 per cent of all farms were over 200 acres in size as against 12·7 per cent in 1901. The growth of agriculture in the Prairie Provinces is reflected in the increase in size of farm. While Ontario had 11·5 per cent of its farms over 200 acres in 1941, Manitoba had 50·3 per cent, Alberta 57·5 per cent and Saskatchewan 68·6 per cent. Moreover, 53·6 per cent of the farms in Alberta and 65·9 per cent of those in Saskatchewan were over 300 acres.

Tenure.—During the past twenty years, there has been a marked change in the status of farm tenure. In 1921, 85·7 per cent of the farms were operated by owners. By 1931 this figure had dropped to 80·1 per cent and this downward trend continued so that by 1941 only 75 per cent of the farms in Canada were occupied and operated by owners. On the other hand, tenancy has increased, rising from 7·9 per cent in 1921 to 12·7 per cent in 1941. This, on the whole, is true for all of the provinces. But the most marked development of tenancy is on the Prairies. In 1941 in Manitoba only 66·1 per cent of the farms, in Saskatchewan 53·0 per cent and in Alberta 62·8 per cent were occupied by owners.

In 1921, 5·6 per cent of the farms were operated by part-owners and part-tenants (owners renting additional land). In 1931 this group was increased to 9·3 per cent and was further increased to 11·57 per cent in 1941. Over the past 20 years the farms operated by managers have never reached one per cent of the total number of farms in Canada. Interestingly enough the highest figure recorded for any province was in Prince Edward Island in 1921. The rise in potato and fur farming may have been responsible for that situation but it was temporary.

Saskatchewan had the highest percentage of farms operated by tenants in 1941, namely 24·3 per cent. Manitoba with 18·8 per cent was in second place and Alberta with 16·9 per cent was third. Of the Eastern provinces, Ontario was highest, reporting 11·89 per cent. Substantial increases were registered only in Saskatchewan and Alberta. Prince Edward Island reported only 2·44 per cent of its farms being operated by tenants in 1941.

Farm Machinery.—Mechanization of Canadian agriculture increased during the thirties. The Prairie Provinces were in the lead of this movement. Thus, the total number of trucks increased by 60·1 per cent between 1931 and 1941. The number of tractors, including those under and over 15 horse-power, showed an increase of 50·8 per cent, and the total number of combines increased by 113·8 per cent during the same period.

Electrification has made some strides forward as the number of electric motors on farms showed an increase of 218·9 per cent. According to the Census data, although the majority of farms are still without electricity, 19·8 per cent had electric service of some kind. Farms reporting electric installations range from a low of 4·8 per cent in Saskatchewan to a high of 37·3 per cent in Ontario. In Ontario 69·6 per cent of the farmers had an automobile whereas in Quebec only 16·4 per cent had a car. The trend toward greater mechanization has continued since 1941, but rationing of equipment has necessarily retarded the rate of increase.

The radio has come to fill an important place in farm homes, thus in Alberta 72·9 per cent of the farmers had a radio. In Ontario the percentage was 66·3; in Nova Scotia 58·7 and in Quebec 36·4. Slightly more than half the farmers in Ontario had telephones. In Alberta, the figure was 18·1 per cent; in New Brunswick 16·0 and in Quebec 15·8 per cent had telephones.

Values.—The 1941 Census reported a total farm value of $4,222,441,473, which indicates a downward turn in the value of farm property as compared with the 1931 figure of $5,247,753,468—a decrease of 19·5 per cent. The values of land, buildings, implements and machinery, showed decreases of 28·9, 19·2 and 7·8 per cent respectively, during this period. The greatest decrease in the value of land occurred in British Columbia—48 per cent and the smallest decline was in the Province of Ontario—6·5 per cent.

The value of farm buildings which constitute almost one-quarter of the total value of farm property showed considerable reduction in each of the provinces. This reduction was especially marked in Nova Scotia and Saskatchewan.

Present trends in agricultural production are of necessity only partly revealed in the Census data. Since 1941, production shifts have been marked especially in the Prairie Provinces. A lesser acreage is in wheat, more in coarse grain and flax. Dairy, poultry and egg production have increased sharply. Especially marked has been the increased hog production. Between 1931 and 1941, hogs on farms increased from 4,699,831 to 6,093,169. By June 1, 1943, this total had gone up to 8,148,500. The Province of Alberta has replaced Ontario as the leading area of hog production in Canada. Saskatchewan follows closely behind Ontario. Nevertheless the Census is a useful national stock-taking deserving of closer analysis than has been possible in the past.

CO-OPERATION IN CANADA 1942

A. E. Richards and Lucienne Lalonde

The United Nations Conference on Food and Agriculture held at Hot Springs, Virginia, May 16 to June 3, 1943, at which forty-four nations were represented, agreed unanimously that all countries study the possibility of the further establishment of producer and consumer co-operative societies.

The full text of Resolution XVII, Co-operative Movements, reads,—

Whereas:

1. The co-operative movement has been of very great importance in many countries, both to urban and rural populations, especially in agricultural districts where farming is based on small units and in urban areas of low-income families;
2. The proper functioning of co-operative societies may facilitate adjustments of agricultural production and distribution, as members have confidence in the recommendations and guidance of their own co-operative organizations, which they now operate in the interest of their members and of society in general;
3. The democratic control and educational programs, which are features of the co-operative movement, can play a vital part in the training of good democratic citizens, and assist in inducing a sound conception of economic matters;

The United Nations Conference on Food and Agriculture recommends,

1. That, in order to make it possible for people to help themselves in lowering costs of production and costs of distribution and marketing:
   (*a*) All countries study the possibility of the further establishment of producer and consumer co-operative societies in order to render necessary production, marketing, purchasing, finance, and other services;
   (*b*) Each nation examine its laws, regulations, and institutions to determine if legal or institutional obstacles to co-operative development exist, in order to make desirable adjustments;
   (*c*) Full information as to the present development of co-operatives in different countries be made available through the permanent organization.

Fortunately Canada, when called upon, is in a position to provide the permanent organization of the Conference with fairly complete information on the development of co-operatives in this country. Every province in Canada has legislation providing for the organization and establishment of producer and consumer societies and has an office of the Government administering the legislation and giving guidance to new and existing co-operatives. The Economics Division of the Department of Agriculture was entrusted with bringing together all available information on co-operative development in Canada and preparing an annual summary. With the fullest co-operation of provincial governments and co-operative organizations throughout Canada, the Economics Division is at this time ready to present its eleventh annual summary.

Co-operative Business Associations.—Reports in the year 1942 have established a record in co-operative activity in Canada. For the first time in the past eleven years reported membership has exceeded 500,000 and total business has passed the 250 million dollar mark. Reserves and surplus which reached a high point of $46 million and an improved working capital position indicate that expansion of co-operatives has been accompanied by a strengthening of their whole financial structure.

In order to increase effectiveness, sales agencies have been formed on a regional basis or on a Dominion-wide commodity basis, as the Canadian

Co-operative Wool Growers, Limited, and the Canadian National Silver Fox Breeders' Association. Wholesale societies are operating in most of the provinces, consolidating the buying power of the local associations and augmenting the benefits to be obtained from quantity buying. The United Farmers of Ontario, Limited, and the Coopérative Fédérée de Québec combine the functions of sales agency and wholesale buying agency for their affiliated local associations.

TABLE 1.—SUMMARY OF ANNUAL STATEMENTS OF NUMBERS, MEMBERSHIP AND BUSINESS OF CO-OPERATIVE BUSINESS ORGANIZATIONS IN CANADA, 1932 to 1942[1]

Year ended July 31	Associations	Places of business	Share-holders or members	Patrons	Sales of farm products	Sales of supplies	Total business including other revenue
	No.	No.	No.	No.	$	$	$
1932	795	3,501	379,687	417,000	134,611,154	10,665,503	145,303,954
1933	686	3,057	342,369	376,000	106,804,186	8,779,115	115,849,894
1934	690	3,223	345,024	379,740	128,909,035	7,389,034	136,411,483
1935	697	3,301	341,020	378,730	117,783,560	7,991,755	126,064,891
1936	781	3,186	366,885	406,321	144,962,609	12,788,192	158,165,565
1937	1,024	3,987	396,918	451,231	157,031,405	16,363,966	173,927,117
1938	1,217	4,125	435,529	462,937	134,493,746	20,091,893	155,080,435
1939	1,332	3,791	445,742	486,589	180,747,471	20,400,008	201,659,984
1940	1,151	3,657	450,453	462,296	214,293,359	21,129,822	236,322,466
1941	1,395	4,005	451,685	507,223	215,030,410	25,895,374	242,158,305
1942	1,722	4,291	561,314	620,034	214,762,980	42,327,447	257,090,427[2]

[1] Co-operative stores included 1942 for all provinces except in the province of Quebec.
[2] Does not include other income.

TABLE 2.—SUMMARY OF ANNUAL BALANCE SHEETS AND FINANCIAL CONDITION OF CO-OPERATIVE BUSINESS ORGANIZATIONS IN CANADA, 1932 to 1942[1]

Year ended July 31	Total assets	Value of plant	General liabilities	Paid-up share capital	Reserves and surplus	Working[2] capital	Net worth in per cent. of total assets
	$	$	$	$	$	$	$
1932	70,226,288	45,607,366	22,072,231	8,570,488	37,805,137	2,546,691	66·0
1933	90,003,261	42,520,970	43,005,593	8,224,016	38,773,652	4,476,698	52·2
1934	104,350,702	40,432,859	56,046,004	8,722,451	39,590,050	7,871,839	46·3
1935	105,183,565	38,850,488	55,306,671	8,933,425	40,943,469	11,026,406	47·4
1936	85,751,901	35,289,468	34,665,210	8,954,135	42,132,556	15,797,223	59·6
1937	87,938,453	36,338,952	36,685,625	9,265,747	41,987,081	14,913,876	58·3
1938	83,140,697	36,569,984	33,423,607	9,265,391	40,451,699	13,147,106	59·8
1939	86,240,783	37,751,641	32,973,321	9,685,537	43,581,925	15,515,821	61·8
1940	102,685,109	38,265,055	48,424,694	10,155,221	44,105,194	15,995,360	52·8
1941	145,658,904	38,567,084	92,222,947	10,503,077	42,932,880	14,868,873	36·7
1942	128,004,893	37,597,916	69,964,822	12,220,249	45,819,822	20,442,155	45·3

[1] Co-operative stores included in year 1942 for all provinces except in the province of Quebec.
[2] Working capital, as used in this table, is the excess of assets less value of plant over general liabilities.

In Canada early expansion of co-operative activity took place most rapidly and to the greatest degree in the marketing of farm products. Presumably this field offered the greatest opportunity to the farmer to effect savings and to provide needed services. However, in recent years, with the establishment of co-operative wholesales in nearly every province, the purchasing of farm supplies and household needs on a co-operative plan has shown a marked increase.

This year, for the first time since the annual summary has been published the business of urban retail co-operative stores is included under sales of supplies. This, in part, accounts for the large increase in this item over 1941.

Due to the light grain crop in Western Canada in 1941 and restricted marketings, sales of grain by the grain co-operatives amounted to $87 million for the year ending July 31, 1942, in comparison with a total of $139 million for the year previous. The drop was more than offset by increases in the volume of marketings of dairy products, live stock, fruits and vegetables and poultry. Sales of this group of products increased from $65 million in 1941 to $102 million in 1942 or an increase of 57 per cent.

Some Canadian farmers market the entire output of their farms on the co-operative plan. A farmer may deliver his grain to a co-operative elevator, live stock to a livestock shipping association and milk to a co-operative dairy. He may also purchase a large proportion of his farm supplies and household necessities from a co-operative store, for tractor fuel and gasoline he goes to his nearest co-operative oil station. This duplication must be kept in mind in interpreting the total co-operative membership figures for Canada of approximately 500,000. A useful measure of co-operative activity on a regional basis is obtained by dividing the total amount of co-operative business for an area by the number of farms which it contains as reported in the last census. On this basis for the crop year 1941-42, British Columbia led all provinces with average marketings of $491 per farm, Manitoba was in second place with $462 per farm, Alberta $331, and Saskatchewan $322. The average for Canada as a whole was $293 per farm. During the past eleven years, farm products marketed co-operatively, in Saskatchewan have averaged $361 annually per occupied farm. British Columbia ranked second with $310, Alberta was third with $302, and Manitoba stood in fourth place with $242 of co-operative business per farm. The annual average for all of Canada during the eleven years 1931 to 1942 was $217 per farm.

TABLE 3.—PRODUCTS MARKETED, MERCHANDISE AND SUPPLIES HANDLED BY CO-OPERATIVE BUSINESS ORGANIZATIONS IN CANADA, CROP YEAR ENDED JULY 31, 1942 [1]

—	Associations	Value of sales
	No.	$
Marketing—		
Dairy products	443	39,218,446
Fruits and vegetables	193	15,431,804
Grain and seed	114	87,013,500
Live stock	321	40,419,386
Poultry	199	7,192,128
Honey	5	726,529
Maple products	7	1,137,980
Tobacco	9	21,242,760
Wool	7	1,367,060
Fur	2	704,935
Lumber and wood	10	118,948
Miscellaneous	10	189,504
Total, Marketing	....	214,762,980
Merchandising—		
Food products	558	9,183,723
Clothing and home furnishings	180	1,371,542
Petroleum products and auto accessories	561	7,239,512
Feed, fertilizer or spray material	834	15,826,570
Machinery and equipment	164	1,289,803
Coal, wood and building material	427	2,930,525
Miscellaneous or not specified	191	4,485,772
Total, Merchandising	....	42,327,447
Grand Total	1,722	257,090,427

[1] Statistics of co-operative stores in the Province of Quebec not included.

The grain growers are the most completely organized of the commodity co-operative marketing groups. Approximately 40 per cent of the grain received at country elevators in Canada during the crop year 1941 was handled by co-operative agencies. Co-operative dairies and processing plants accounted for 25 per cent of the total output of dairy products and fruit and vegetable co-operatives handled approximately 26 per cent of the total fruit and potatoes sold in Canada and exported for sale overseas. Co-operatives handling live stock and live stock products accounted for approximately 25 per cent of the total marketings. All marketing co-operatives handled approximately 32 per cent of the main farm products entering commercial channels of trade.

Table 4.—Co-operative Business Organizations by Provinces, Crop Year Ended July 31, 1942

Province	Associations	Shareholders or members	Sales of products	Sales of merchandise	Total business
	No.	No.	$	$	$
Prince Edward Island	24	11,148	1,995,165	355,265	2,350,430
Nova Scotia	131	15,794	2,414,186	4,200,274	6,614,460
New Brunswick	29	7,376	1,702,618	734,509	2,437,127
Quebec[1]	409	33,827	27,948,844	9,037,509	36,986,353
Ontario	264	48,411	44,284,534	7,043,705	51,328,239
Manitoba	106	63,643	26,817,144	2,576,302	29,393,446
Saskatchewan	514	210,567	44,610,966	8,500,785	53,111,751
Alberta	137	105,475	32,998,516	4,472,283	37,470,799
British Columbia	102	19,305	12,960,387	3,342,272	16,302,659
Interprovincial	6	45,768	19,030,620	2,064,543	21,095,163
Total	1,722	561,314	214,762,980	42,327,447	257,090,427

[1] Does not include statistics for urban co-operative retail stores.

Many associations formed primarily for marketing have found it possible to render an additional service to their members by utilizing the buying power already mobilized for the purpose of purchasing supplies needed on the farm. For example, fruit marketing associations may buy fertilizer, spray material, barrels, boxes, flour and feed and general merchandise for their fruit growing members. Associations have been formed primarily for the purpose of buying supplies, usually bulk commodities, and some are operating stores carrying a full line of general merchandise.

Table 5.—Financial Structure of Co-operative Business Organizations by Provinces, Crop Year Ended July 31, 1942

Province	Total assets	Value of plant	General liabilities	Paid-up share capital	Reserves and surplus
	$	$	$	$	$
Prince Edward Island	253,718	44,883	221,505	38,310	−6,097
Nova Scotia	2,626,842	952,818	1,091,150	900,523	635,169
New Brunswick	496,691	174,173	329,645	118,031	49,015
Quebec[1]	10,578,471	4,423,209	5,591,431	1,690,552	3,296,488
Ontario	5,998,294	2,244,493	3,031,304	1,402,418	1,564,572
Manitoba	10,186,715	2,806,519	6,853,479	476,061	2,857,175
Saskatchewan	54,863,718	13,787,106	27,352,390	1,771,985	25,739,343
Alberta	17,993,123	5,325,484	10,073,307	458,685	7,461,131
British Columbia	6,523,341	2,002,421	3,084,806	2,033,623	1,404,912
Interprovincial	18,483,980	5,836,810	12,335,805	3,330,061	2,818,114
Total	128,004,893	37,597,916	69,964,822	12,220,249	45,819,822

[1] Does not include statistics for urban co-operative retail stores.

Out of the 1,722 co-operative associations reporting in 1942, a total of 558 handled food products to the value of $9 million and 180 associations handled nearly $1·5 million of clothing and home furnishings for their members and patrons. These associations included the business of approximately 250 urban consumer societies. Petroleum products handled by 561 associations were valued at $7 million. Farmers of 834 associations purchased $16 million of feed, fertilizer and spray material on a co-operative basis.

The history of consumers' co-operation in Canada has not been encouraging although some of the earliest efforts at co-operation in Canada were in the field of consumers' co-operation. The one society which has a continued record of successful operation is the British-Canadian Co-operative Society Limited at Sydney Mines, Nova Scotia. This society began business in 1906 with a single small store at Sydney Mines and now operates branch stores at North Sydney, Glace Bay, Florence and Cranberry. The society handles groceries, dry goods, meats, men's wear and also operates a bakery, a dairy and a tailoring department. For the past thirty-five years this society has been one of the most successful examples of consumers' co-operation in Canada and on the continent.

TABLE 6.—STATISTICAL SUMMARY OF CREDIT UNIONS IN CANADA BY PROVINCES FOR 1942 FINANCIAL YEAR

Province	Credit unions	Members	Total assets	Shares	Deposits	Loans granted in last financial year	Loans granted since inception
	No.	No.	$	$	$	$	$
P.E.I.	45	5,580	126,665	100,732	13,194	95,067	518,067
N.S.	202	28,553	1,225,098	1,096,417	33,005	892,174	5,654,099
N.B.	140	20,648	709,783	640,371	22,322	697,695	2,322,000
Quebec:—							
Desjardins[1]	650	187,528	38,169,967	3,567,999	32,025,339	6,000,000	112,061,694
Other	9	1,690	123,299	43,842	28,398	81,243	258,399
Ont.	129	23,699	2,645,461	987,344	1,315,515	1,869,603	14,093,430
Man.	60	6,448	238,265	122,345	103,040	262,686	678,520
Sask.	92	9,179	312,125	227,326	64,444	435,668	1,111,433
Alta.	74	6,283	245,222	192,678	34,260	354,872	883,563
B.C.[2]	85	6,376	176,040	162,702	5,265	237,077	362,247
Canada, 1942	1,486	295,984	43,971,925	7,141,756	33,644,782	10,926,085	137,943,452
Canada, 1941	1,314	238,463	31,230,813	5,764,514	22,703,312	9,652,534	127,017,367

[1] Six Caisses Régionales with assets of $8,174,666 are not included here.
[2] Forty-one only of the 85 credit unions reporting.

Fishermen's Co-operatives.—Co-operation among fishermen on Canada's Atlantic and Pacific coasts is of recent origin. Information obtained from the Department of Fisheries records the establishment of a co-operative association among fishermen on the Atlantic coast in 1924. This association was organized at Tiginish in Prince Edward Island. No further organization is reported until 1930 when societies were formed in New Brunswick and Nova Scotia. From that year societies sprang up annually until in 1942 a total of 67 associations were reported as operating in that year. Total volume of business done by the 67 associations amounted to $2,628,380. Estimated membership in all associations reporting is approximately 4,826.

Fishermen's co-operative associations in Canada are engaged in other activities than the marketing or processing of fish. On both coasts the fishermen pool their purchases of fishing gear and nets through their marketing associations. On the east coast particularly, many groups operate co-operative stores which supply the members with household necessities such as groceries, meats and dairy products.

Credit Unions.—The credit union development has become an important part of the co-operative movement in Canada. At the end of 1942, more than fourteen hundred credit unions were chartered and each of the nine provinces had provided legislation governing the establishment and operation of credit unions. The movement has not been confined by race or creed, for example, on May 16, 1940, the Skidegate Mission Credit Union was chartered among the Indians of the Skidegate Reserve in British Columbia. Canadian development has been general and credit unions have been organized at a fairly rapid rate since 1936.

Insurance.—Canadian farmers have used the group principle to insure their property against loss by fire for over seventy-five years. Some companies which began with a strictly rural clientele have now extended their coverage to include city property as well. The common feature of mutual fire insurance companies in Canada is the premium note which is given by the insured when his risk is underwritten. The insured may be required to pay a definite portion of this in cash in advance or he may be assessed from time to time to provide cash to pay off losses incurred and management expenses.

All companies may be incorporated under Dominion or Provincial legislation and they thus come under the supervision of the various superintendents of insurance.

These companies are purely mutual companies. They are controlled and directed by their farmer members for the benefit of the members. They constitute one of the oldest and probably the most successful co-operative undertakings established by Canadian farmers.

A recent tabulation showed that 365 farmers' mutual fire insurance companies carried at risk insurance amounting to well over a billion dollars.

Miscellaneous and Service Type Co-operatives.—Included under this heading come various services which are being provided in a co-operative manner such as housing, medical care, telephone systems and burial societies. Associations of this nature are more recent in development but are gaining in importance. Until a complete survey of the field of consumers' co-operation is made no accurate information is available. Co-operative principles have also been applied in isolated instances to many other forms of enterprise such as restaurants, laundries, printing and publishing and electrification.

Most widespread of all these various service type co-operative associations are those providing telephone service. Organized in rural areas for the most part, records for the year 1913 indicate the existence of 262 co-operative telephone systems. By 1940 the number had increased to 2,348 and the number of connected telephones amounted to 102,286. The total investment in these systems was approximately 20 million dollars.

In view of the increasing demand on the part of the public and the hospitals for some means of lessening the financial burden of sickness, several hospital plans have been developed in connection with public hospitals throughout Canada.

In 1941 Canada had some 38 plans of hospital group insurance and many others in the process of development. Most plans now in operation have the same basic idea. There is usually a monthly fee on a family or individual basis in return for which the subscriber is entitled to preferential rates on various hospital services and many routine services at no extra cost. The Institutional Statistics Branch of the Dominion Bureau of Statistics reports five such plans in Nova Scotia, two in New Brunswick, seven in Ontario, one in Manitoba, three in Saskatchewan, seven in Alberta and thirteen in British Columbia. In the Province of Quebec one plan is ready to operate.

The first province-wide plan developed in Canada was launched by the provincial government of Manitoba and is at present the largest in the Dominion although its operations are confined to the larger cities. Upon payment of certain monthly fees subscribers are entitled to 21 days of hospital care which includes food and special diets, general nursing care, dressings, drugs and medicines. Discounts are allowed on laboratory analyses, X-rays and other treatments.

A plan in Ontario sponsored by the Ontario Hospital Association in co-operation with the Ontario Medical Association is quite similar to the Manitoba plan.

The two public hospitals in Kingston, Ontario, have adopted a joint hospital plan which is a departure from the usual insurance-type plan. A pro-rata distribution of the full amount of the fund derived from the prescribed fees is made among subscribers who were hospitalized during the year on a basis of their receipted accounts.

SOME OBSERVATIONS ON FARM HOUSES IN REPRESENTATIVE AREAS OF SASKATCHEWAN

R. A. Stutt

Certain information relating to the condition, age and size of farm buildings has been obtained by the Economics Division, Marketing Service, Dominion Department of Agriculture and the Department of Farm Management, University of Saskatchewan as part of farm business studies conducted in various areas of Saskatchewan since 1939.

While general information relating to farm buildings is available for farm management studies in Saskatchewan from 1927 to 1942, data pertaining only to farm houses for the studies since 1939 are included in this analysis.

The condition, age and size of farm buildings are considered a fairly reliable indication of economic conditions and prosperity in areas settled for a reasonable length of time. In the economic land classification completed for the southern part of the Province, information was assembled on the size and condition of farm buildings and it was found there was a general association between farm buildings and productivity of the land. However, due to the vastness of the area relative to the number of the buildings, and other factors such ratings were not satisfactory for use in a detailed classification of the land.

As the farm house is the focal point in the farm layout, information pertaining to farm dwellings is of special interest. It reflects generally the satisfactions enjoyed by farm families and the status of farming in our economic structure. The purpose of this article is to give a representative picture of farm houses in Saskatchewan and to take stock of the present situation so that agencies planning for post-war agriculture may have accurate information. It is readily agreed that improvements in the condition of farm homes in Saskatchewan are badly needed, and that some thought should be given towards rural housing in a broad reconstruction program.

Location of Areas.—The Eyebrow-Lacadena area is located in West Central Saskatchewan and includes lands ranging from land class I (submarginal for wheat production) to land class V (excellent wheat land). The area has been named after towns on the boundaries of the study areas and this method of representation has also been applied to the other areas. The R.M. Pittville No. 169 lies towards the southwest of the Province and is approximately 30 miles west and north of Swift Current. It includes soils ranging from silty clays to sands. The Wilcox survey was confined entirely to Regina heavy clay soils, in the R.M. of Bratt's Lake, No. 129. This is considered to be one of the most productive areas in the prairie region. The Weyburn-Alameda survey was confined largely to medium textured loam soils between these two centres. This area has been subjected to a relatively longer period of drought conditions than any other area of the prairies. The Blucher-Colonsay area is about 20 miles south and east of Saskatoon. The soil types range from sand to sandy loams on the western edge to clay loam and clays on the east.

The park region areas are widely separated and are indicative of a wide range of conditions. The Balgonie-Qu'Appelle area is one of the oldest settled parts of Saskatchewan. It is located about 30 miles east of Regina and includes principally loam soils. The area of the Saltcoats-Churchbridge study is about 25 miles south and east of Yorkton and the soils are medium textured parkland soils. This area has been settled for a relatively long time. The Lashburn-Paynton area is in the northwest part of the Province. It was settled by immigrants of British origin. The Melfort and the Aylsham-Carrot River areas are located in northeastern Saskatchewan. The soils are principally clay loams and are considered the most productive soils in the parkland region.

TABLE 1.—DISTRIBUTION OF FARM HOUSES ACCORDING TO CONDITION IN REPRESENTATIVE AREAS OF SASKATCHEWAN. FARM BUSINESS SURVEYS, 1939-1942

Areas	Condition of farm house							
	Poor		Fair		Good		Total	
	No.	%	No.	%	No.	%	No.	%
Prairie Area—								
Eyebrow-Lacadena	90	20·1	333	74·3	25	5·6	448	100·0
R.M. Pittville No. 169	37	29·8	77	62·1	10	8·1	124	100·0
Wilcox	22	19·7	82	73·2	8	7·1	112	100·0
Weyburn-Alameda	86	32·5	168	63·4	11	4·1	265	100·0
Blucher-Colonsay	23	15·5	112	75·7	13	8·8	148	100·0
Total	258	23·5	772	70·4	67	6·1	1,097	100·0
Park Area—								
Balgonie-Qu'Appelle	26	32·5	52	63·4	2	4·1	80	100·0
Saltcoats-Churchbridge	53	26·2	133	65·9	16	7·9	202	100·0
Lashburn-Paynton	41	29·7	79	57·2	18	13·1	138	100·0
Melfort	28	27·4	59	57·9	15	14·7	102	100·0
Aylsham-Carrot River	47	50·0	39	41·5	8	8·5	94	100·0
Total	195	31·6	362	58·8	59	9·6	616	100·0
Pioneer Area—								
Pleasantdale	44	61·1	28	38·9	....	....	72	100·0
Albertville-Garrick	173	55·3	130	41·5	10	3·2	313	100·0
Preeceville-Lintlaw	61	50·8	54	45·0	5	4·2	120	100·0
Bjorkdale-Carragana	81	60·0	44	32·6	10	7·4	135	100·0
Crooked River	25	51·0	23	46·9	1	2·1	49	100·0
Big River	29	44·6	36	55·4	....	....	65	100·0
Meadow Lake-Makwa	64	64·6	28	28·3	7	7·1	99	100·0
Loon Lake	28	45·9	31	50·8	2	3·3	61	100·0
Goodsoil-Pierceland	59	70·2	23	27·4	2	2·4	84	100·0
Total	564	56·5	397	39·8	37	3·7	998	100·0
ALL AREAS	1,017	37·5	1,531	56·5	163	6·0	2,711	100·0

The individual areas included in the pioneer fringe region are mainly found on grey wooded or degraded black soils and are generally of quite recent settlement. The Pleasantdale area is south of Melfort and the Preeceville-Lintlaw, Bjorkdale-Carragana, Crooked River areas are all in eastern and northeastern Saskatchewan. The Albertville-Garrick area is north and east of Prince Albert while the Big River area is found northwest of the same point. The Meadow Lake-Makwa, Loon Lake and Goodsoil-Pierceland areas are situated towards the extreme northwest corner of the settled area of Saskatchewan.

Condition of Farm Houses.—Due to drought conditions in many parts of the Province during the 1930-1937 period, and also due to unfavourable cost-price relationships, farmers generally were unable to build new houses or make satisfactory improvements to their farm houses.

While the condition ratings of houses are somewhat relative they are comparable as between the survey areas. Enumerators were trained to observe the apparent lack of condition of farm houses as noted by poor foundations, faulty roofs, lack of paint, windows, etc.

Table 1 shows the general condition of farm houses in representative areas of the prairie, park and pioneer fringe regions of the Province. The information on farm houses in the farm business studies was compiled for these general areas on the basis of the soil zonal map of Saskatchewan.

The condition of farm houses in the prairie region is generally superior to that in the park and the pioneer regions. A somewhat greater range in condition is revealed for the park region than for the other regions.

For the prairie region, the highest proportion of farm houses in fair and good condition was found in the Blucher-Colonsay, the Wilcox and Pittville areas. The Weyburn-Alameda area which experienced the most serious drought conditions also indicates the poorest condition of buildings. In the park region the Melfort and Lashburn-Paynton areas indicated a considerably better condition of homes than other areas.

Farm houses in the pioneer fringe region are generally in poor condition. The majority of settlers' houses in this region are built of logs and are of rough construction. This situation is in direct contrast with that in the prairie and park regions where the usual house is of frame construction with a small proportion of brick and stone construction. The poorest condition of houses for the pioneer region was shown by the Goodsoil-Pierceland area.

Age of Farm Houses.—The distribution by ten-year age intervals of the 2,250 farm houses for which information on age was available is shown in table 2. There were 461 farm houses for which the present occupant had no information as to the present age. For the prairie region, 75·3 per cent of the farm houses were built previous to 1923; 42·4 per cent were built between 1913 and 1922 and 30·7 per cent during the 1903-1912 period. In the Blucher-Colonsay area, 10·4 per cent of the houses were built since 1933, the highest proportion for any of the study areas in the prairie region. Farm houses in the park region were of more recent construction than those of the prairie region. Only about half of the houses were built prior to 1923. The majority of present farm houses were built between 1913 and 1932, being equally divided between the 1913-1922 and 1923-1932 periods. Forty-seven per cent of the settlers' houses in the northern pioneer region were built between 1933 and 1943. Of the houses, less than 10 years of age in the prairie and park region, a little over one-fifth were in good condition.

The proportion of houses in good condition decreased gradually as the ages of houses advanced. For the age group of 41 to 50 years only 9·6 per cent were in good condition. The decrease in condition of houses with age was relatively greater in the northern pioneer region than for the prairie and park regions.

Present Value of Farm Houses by Condition Ratings.—The average present value of houses in good condition in representative areas of the prairie region was $2,622. This varied from $2,140 at Eyebrow-Lacadena to $4,750 at Wilcox. Those in fair condition averaged $1,061, varying from $965 at Blucher-Colonsay to $1,534 in the Wilcox area. Farm houses in poor condition averaged $421 and ranged from $289 in the R.M. Pittville No. 169 to $764 in the Wilcox area.

Houses in good and excellent condition in park land areas had an average present value of $2.242. The lowest average value was at Balgonie-Qu'Appelle ($775) and the highest average value was at Melfort ($3,473). Houses in fair condition had an average present value of $957 and the value was again lowest in the Balgonie-Qu'Appelle area. The average present value for houses in poor condition was $362 and ranged from a low of $257 at Lashburn-Paynton to $418 at Balgonie-Qu'Appelle.

In the northern pioneer region the average present values of settlers' houses in good, fair and poor condition was $1,054, $446 and $202 respectively. The range for the respective study areas was not wide, although the present values of farm houses were relatively high in the Meadow Lake-Makwa area and relatively low at Pleasantdale.

Houses of comparable condition ratings were of higher present value in the prairie and park land areas than in the northern pioneer areas. In the northern pioneer areas houses were generally of smaller size and investment, usually less than 4 rooms and of one-storey construction, and this size factor largely accounts for the lower average present value.

TABLE 2.—PERCENTAGE DISTRIBUTION OF FARM HOUSES WITH INFORMATION ACCORDING TO PRESENT AGE IN REPRESENTATIVE AREAS OF SASKATCHEWAN. FARM BUSINESS SURVEYS, 1939-1942

—	Present age of house (years)						
	1-10	11-20	21-30	31-40	41-50	Total with information	
	%	%	%	%	%	No.	%
Prairie Area—							
Eyebrow-Lacadena	2·9	24·4	45·9	26·8	....	344	100·0
R.M. Pittville No. 169	3·5	17·2	50·0	29·3	....	116	100·0
Wilcox	....	19·3	38·8	39·8	2·1	98	100·0
Weyburn-Alameda	1·2	19·8	36·6	33·7	8·7	172	100·0
Blucher-Colonsay	10·4	20·9	35·7	31·3	1·7	115	100·0
Total	3·3	21·4	42·4	30·7	2·2	845	100·0
Park Area—							
Balgonie-Qu'Appelle	17·0	23·7	25·4	27·1	6·8	59	100·0
Saltcoats-Churchbridge	12·7	21·4	35·3	26·0	4·6	173	100·0
Lashburn-Paynton	18·8	32·8	36·9	11·5	....	122	100·0
Melfort	9·9	39·5	33·3	17·3	....	81	100·0
Aylsham-Carrot River	52·2	35·2	9·8	2·8	....	71	100·0
Total	19·8	29·2	30·6	18·0	2·4	506	100·0
Pioneer Areas—							
Pleasantdale	42·6	37·7	14·8	4·9	....	61	100·0
Albertville-Garrick	45·1	50·4	4·5	....	....	292	100·0
Preeceville-Lintlaw	41·6	32·7	15·8	9·9	....	101	100·0
Bjorkdale-Carragana	42·3	49·9	7·8	....	....	116	100·0
Crooked River	44·2	51·1	4·7	....	....	43	100·0
Big River	46·6	50·0	3·4	....	....	58	100·0
Meadow Lake-Makwa	50·0	48·9	1·1	....	....	90	100·0
Loon Lake	50·0	43·1	6·9	....	....	58	100·0
Goodsoil-Pierceland	71·3	28·7	....	....	....	80	100·0
Total	47·4	44·9	6·2	1·5	....	899	100·0
ALL AREAS	24·6	32·6	25·3	16·1	1·4	2,250	100·0

Present Values of Houses According to Size.—Generally speaking, houses having one, two or three rooms were rated as having small investment, houses having four to six rooms were rated as having a medium investment and houses having seven rooms or more were rated as having a large investment. The amount of investment was given more weight than the number of rooms or the actual measurements of the house in arriving at the ratings for size.

In the prairie areas 43·9, 51·9 and 4·2 per cent of farm houses were rated as constituting small, medium and large investments respectively. The proportion of farm houses in comparable size groupings in the park region were 46·9, 48·5 and 4·6 per cent; and in northern pioneer areas, 63·8, 35·3 and 0·9 per cent respectively.

The average present values of farm houses in the prairie region of small, medium and large investment were $460, $1,296 and $3,036 respectively. In the park region houses in comparable size groupings averaged $424, $1,164 and $2,866 respectively. Considerably lower average values prevailed for the pioneer region. Here houses of small, medium and large investment averaged $207, $524 and $1,533 respectively.

When houses were grouped according to size and condition the most frequent group was for farm houses of medium investment in fair condition in both the prairie and the park land regions, and for houses of small investment in poor condition in the northern pioneer areas. In the prairie region, 39·1 per cent of all farm houses were of medium investment and in fair condition and in park land regions this group included 32·3 per cent of all houses. In the newly settled pioneer region, 44·6 per cent of all houses were of small investment and in poor condition.

At Wilcox a superior prairie area, 71·4 per cent of all houses were of medium to large investment. In the Melfort area a superior park area, houses of medium and large investment included 66·7 per cent of all houses, while at Big River, in northern pioneer region, the respective proportion was 49·2. The lowest proportion of farm houses of medium to large investment was 31·7 per cent at Preeceville-Lintlaw.

In each soil-climatic region of the province, the average value of present investment for size ratings increased with the improvement in the condition of farm houses.

One may draw a general conclusion that the size and condition of buildings are generally related to soil type and to some extent to size of farm in Saskatchewan.

Rehabilitation of Saskatchewan Farm Houses.—There is insufficient reliable data available to indicate the amount of repair necessary to bring Saskatchewan farm houses up to reasonable and satisfactory condition. At least 50 per cent of the houses in poor condition need to be replaced by more adequate and suitably constructed dwellings and the remaining 50 per cent need at least about one-half of this replacement cost to put them into proper condition. Farm houses in fair repair would need about 10 to 20 per cent of the present value spent on repairs to put them into a satisfactory livable condition.

Preliminary results of a farm business study conducted in the Cory-Asquith-Langham area in Central Saskatchewan in July and August, 1943, bear out these statements. In this area about 47 per cent of all farm houses included in the sample were rated as being in poor condition. Farm operators were asked the amount of repair expense needed to put their houses into satisfactory condition. Twenty-three per cent of these farmers said that it was necessary to rebuild the farm house. Only 10 per cent claimed that the house did not need any repairs and 67 per cent said the house needed repairing.

Farm houses in the Cory-Asquith-Langham area in poor condition which were considered capable of being repaired were reported to need an average of $300 to put them into a livable condition, according to the statement of the farm operators. Those in fair condition need about the same amount of expenditure. Where repairs over this amount were required most of the farmers felt it was more satisfactory to rebuild the house. Exceptions to this would include houses rated as being of large investment in fair to good condition.

While this study indicates that the size and condition of houses is related largely to the amount of investment which different farms and different areas can support, the investment needed is not the only consideration in a rural housing program. Guidance to rural people in selecting houses of proper type and construction would go a long way in improving housing conditions in the Province.

COMMUNITY WARTIME AGRICULTURAL COMMITTEES

F. SHEFRIN

The conversion of a peace-time agriculture into wartime production, like the conversion of industry, means planning. Planning in turn means working together. Since the outbreak of the war in September, 1939, each of the provinces has set up its own organizations to cope with new agricultural problems. Farmers, technical men and government officials get together within their respective communities and provinces to discuss ways and means of producing more of the desired foodstuffs. However, for the first time in the history of Canadian agriculture, national production objectives for the coming year were announced in December, 1942. Behind this announcement of goals lies the history of the Outlook services. The various Departments of Agriculture, Dominion and Provincial, together with certain other governmental departments have for many years provided information dealing with production, marketing, prices and so forth. To some extent direction of marketing, and indirectly, adjustments of production, have been influenced or controlled by agencies established under provincial authority. In the main, however, relatively little has been done by compulsory means to modify production.

In October, 1942, a special farm production objectives committee known officially as the Committee on Food Requirements and Production Capacity was set up. Its members were representatives of the Agricultural Supplies Board of the Department of Agriculture, the Wartime Prices and Trade Board, the Post-War Reconstruction Committee, and the Department of Trade and Commerce. The purpose of this Committee was, first, to determine the food needs both domestic and export. Secondly, it had to estimate Canada's agricultural production capacity.

The Committee worked out agricultural production objectives for 1943. These objectives were presented for approval to representatives of the Provincial Departments of Agriculture and representatives of the farm organizations who met in Ottawa in December, 1942. After the acceptance of the objectives in whole, came the job of breaking these down into provincial, county, municipal and individual farm goals.

To do this job right in each province, county and municipality, the local community undertook its assignment as a team. Farmers throughout Canada working through existing or newly organized committees set out to achieve the desired objectives. The following section describes briefly some of the activities in each of the provinces.

Prince Edward Island.—In 1940 an Agricultural Supplies Board was organized to promote a production program during the wartime period. Members of the Federal and Provincial Departments of Agriculture are on the general committee and in addition, outstanding farmers are included. The main committee is divided into eight sub-committees, each dealing with a specific phase of agricultural production. Reports are received from these sub-committees and discussed. Recommendations are then summarized and brought to the attention of departments or organizations responsible for the promotion of any specific recommendations. In 1942 through the Department of Agriculture, a weekly broadcast service was organized, in addition, each of the four Island newspapers carried under the heading "The Farm Front", department policy appeals in all forms of practical suggestions on various farm problems.

Nova Scotia.—In Nova Scotia there is a Provincial Agricultural Advisory Committee of which the Minister is the chairman. This Committee is made up of senior Dominion and Provincial agricultural officials. This committee, in turn, is divided into sub-committees dealing with agricultural production and marketing. For a definite production program the Agricultural Advisory Committee more or less established a policy and, in turn, put this out in the counties. For example, in the case of production goals in 1942 they were taken up at the annual Extension Conference during the first week in January. No attempt was made to direct the Agricultural Representatives on any set way to further the production program in their respective districts. Most counties following the Extension Conference either had one general meeting or a meeting of Directors of the County Farmers Association, or of representatives from them and of the Municipal Council and in some instances, other organizations. What the Nova Scotia people tried to do was to tie in on various organizations within the counties and districts the job of boosting the production program.

New Brunswick.—An Agricultural Advisory Committee was set up in March, 1943, composed of Provincial and Dominion agricultural officials, as well as representatives from some of the principal farm organizations. The Minister is chairman. The Committee gave main consideration, first, to increased production and, second, to post-war planning. Two sub-committees were set up, one to deal with soils and crops, the other with live stock and dairying.

Quebec.—In this province, there is a Provincial Intensive Production Committee composed of officials of the Department of Agriculture as well as representatives from the different agricultural schools and also from many agricultural organizations. Local committees have been organized in 920 districts. These local committees are made up of the heads of the various agricultural organizations, managers of co-operatives and Caisse Populaire, representatives of the Municipal Council, local professional men and clergymen. The agronomes acted as organizers.

These local committees have made surveys of the crop acreage, seed, fertilizer, labour and equipment requirements for their respective districts. On the basis of this information, they were able to determine what action was necessary to fulfill production objectives. Each committee also modified the production goals to suit the productive capacity of their area. In addition, the committees have acted as clearing offices for requests, complaints and information in general. They have also assisted farmers in co-operatively purchasing feed grain.

The Provincial Committee in turn has kept in close touch with the local groups providing them with production folders and general information about farm labour, price ceilings, trucking regulations and so forth.

The Quebec Department of Agriculture in co-operation with National Selective Service has set up a special office for the purpose of allocating farm labour where it is needed.

Ontario.—County Agricultural War Committees in each county have been set up as the local situation permitted. In most cases, the Committee is composed of county and township councillors, and mainly good farmers. The agricultural representative is the secretary of these county committees. Everything is done through the agricultural representative's offices. The Committees are encouraged to extend to the point where they have representatives in every community or school sections. They are also encouraged to set up sub-committees.

There is also the Farm Service Force organized under a Committee of the Departments of Agriculture, Education, and Labour. This organization looks after boys' and girls' camps, assists with the private camps and places men and boys on individual farms. This organization works closely in conjunction with the County Agricultural War Committee and National Selective Service. In September, 1943, a Committee of Enquiry was set up representative of various farm organizations and groups. The purpose of the Committee is to make a study of the farm situation in the province and recommend the necessary action needed for the continued expansion of wartime production and post-war readjustments.

Manitoba.—The rural municipality acts as the local unit. Each councillor accepted responsibility for setting up committees in his own ward. Agricultural societies, Women's Institutes, Horticultural Associations and Livestock Associations are co-operating. The committees organized meetings, used the press and radio, and in this fashion disseminated information on production objectives.

Saskatchewan.—Win the War Committees have been organized in the rural municipalities and local improvement districts in order to develop and promote the greatest possible efficiency in agricultural production. As a general rule, municipal councils have formed themselves into Win the War Committees although in a few cases, they have appointed additional members to the Committee. The Provincial Committee has representation from the Saskatchewan Wheat Pool, the Union of Rural Municipalities, the Land Utilization Board, the Relief Branch of the Department of Municipal Affairs, the Northern Areas Branch, and the Dominion Employment Service. The first job assigned to Win the War Committees was that of taking an agricultural census of Saskatchewan to determine the need for more farm labour where such need exists and to discover surpluses of farm labour, if any. A survey was also made of farm machinery, acreage plans and animal production. It is interesting to note that the farm questionnaires have been useful in establishing the essentiality of young men for agricultural purposes within the military draft age. This information has been made available to the National Mobilization Board and has helped them to reach decisions as to whether postponements are warranted in individual cases. Perhaps, most important of all is the fact that a local committee is available, which recognizes a definite responsibility for dealing promptly and decisively with agricultural problems as they arise from season to season.

Alberta.—In Alberta there is a "Farm for Victory Program." The province was divided into 28 districts or zones, in each of which there is a zone Farm for Victory Committee composed of eight to ten representative farmers and leaders of farm organizations. In turn, each zone is divided into a number of Community Farm for Victory Committees which deal with local problems. The personnel of the community committees are farmers and representatives of any farm organization and representatives of farm women's organizations, school boards, boards of trade, parent-teachers' associations, and other organizations of this kind. The district agricultural representative acts as secretary of the Zone Committee and is also contact man with the Community Farm for Victory Committees. He assists all Community Committees with any projects they undertake, while the Zone Committee acts as an advisory body.

One feature of the organization program dealt with the advantages of close contact between Agricultural Extension Services and the farmers represented on the Community Committees. Another featured advantage for wide-spread organization is the possibility of exchanging ideas and methods for solving problems related to agricultural production. The functions of the Committees are: to explain the programs; to find out from each farmer his production program; to bring about the maximum use of all farm machinery and equipment; to bring about an effective distribution and use of available manpower; to organize campaigns to eliminate insect pests, live stock diseases, noxious weeds; to eliminate unnecessary losses of young animals; to better feeding practices; to work out a plan to continue production.

British Columbia.—This province organized the Agricultural Production Committee during the second week of September, 1939. The objectives of the Committee were: to ascertain existing requirements of locally produced foodstuffs; to secure production figures of farms for the current year; to outline production programs in co-operation with extension services and farm organizations; to co-operate with any federal committee or service that might work along similar lines; to co-operate with Advisory Boards toward the development of agricultural production in Canada; to unify and direct provincial agricultural operations; The Board also acts as a clearing house between the Agricultural Supplies Board in Ottawa and the farmers in British Columbia.

Farmer contacts have been established through the Farmers' Institutes and Women's Institutes. Press and circulars have also been used.

In addition to its purely agricultural functions, the Committee has maintained close supervision of farm machinery and farm labour needs. Since the establishment of the Emergency Farm Labour Board in Vancouver the Secretary of the Agricultural Production Committee has been secretary of the Dominion-Provincial Emergency Farm Labour Service and thus a liaison has been set up between the two organizations.

Each of the nine provinces in this fashion has co-operated with the Dominion Department of Agriculture in attaining increased production of feed and food. Through these organizations, production programs were put into effect. The farmer, the technician and the government official met at these committee meetings and co-operated in attempting to solve such problems as rationing, priorities, labour and farm machinery shortages. These local groups of farmers will play a big part in the successful achievement of the 1944 production program.

HOG PRODUCTION IN NORTHEASTERN ALBERTA

B. H. Kristjanson and J. L. Anderson

Greater demands on the nation's food production potential in time of war has directed the efforts of many farmers to increased emphasis on the production of pork. In the economical conversion of grain into edible meat the pig is second to none among farm animals. Furthermore the breeding stock may be rapidly established and increased and the capital outlay is comparatively low. In addition, the raising of hogs has in many cases increased efficiency in the use of farm labour with the result that the farm income has risen in proportion to the size of the hog enterprise.

The demand for increased pork production is clear and concise—the requirements exceed production. Yet, because the demand is so urgent and the local markets for whole grains are often saturated, and because it is known that the production of pork has increased enormously following the outbreak of war—the opportunity for a continued expansion continues.

It has been a characteristic of mixed farming in Western Canada that the production of hogs has been considered a residual enterprise. Although this attitude has prevailed in the district under consideration, here hog production has received considerable emphasis, particularly under the wartime conditions of the last three or four years. Notwithstanding this upswing of interest in hogs, many producers have not yet reached the limit of their capacity and it appears that a further increase may be expected during the coming year.

It is the purpose here to discuss present production practices and to evaluate present and probable potential trends in the production of hogs in northeastern Alberta. To this end 164 farmers in the Bonnyville district were interviewed during July of this year.[1] The present situation with respect to hog production in this selected area was considered to be generally representative of mixed farming of northeastern Alberta.

Hog Management.—A detailed investigation of hog management was beyond the scope of this study but a number of important conditions which may affect future production were considered.

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[1] The survey of problems connected with settlement and the pioneer farm business in an area around Bonnyville was conducted during the past summer by the Economics Division, Dominion Department of Agricutlure in co-operation with the University of Alberta. As a supplement to this, on farms where two or more sows were kept, special enquiry was made concerning the hog enterprise.

Feeding.—While all producers fed skim milk the importance of supplementing the protein in the ration has been realized, at least to some extent, by most producers and it should be remembered that these farms were carrying two sows or more, making the supply of skimmilk available for hog feeding quite limited in most cases. Approximately two-thirds of the farms were following the practice of feeding protein supplements. The amount or adequacy of the feeding of protein supplements was not determined but it was evident that many have realized the importance of protein balance in improved feeding practice.

Certain minerals such as lime and iron are often required for growing pigs in greater amounts than available in the farm grains. A conscious effort to make up the deficiency of such minerals was being made by the majority of producers. Seventy-one per cent were feeding either lime, coal or both coal and lime in addition to salt, and of the remaining 29 per cent feeding neither coal nor lime, one-half were using a complete commercial supplement. Forty-seven per cent were supplying reduced iron to the young pigs in an effort to prevent anaemia.

TABLE 1.—MINERALS FED IN ADDITION TO SALT ON FARMS IN BONNYVILLE DISTRICT WHERE TWO OR MORE SOWS WERE KEPT

Mineral	Farms feeding	
	Number	Per cent of all farms
	No.	%
Lime	7	7
Coal	25	26
Coal and lime	36	38
No coal or lime (1)	28	29

(1) About one-half of those farms feeding no coal or lime were using a complete protein and mineral supplement.

Two other aspects of feeding were considered—that of providing the sows with iodine and of including cod liver oil in winter rations. It was found that 25 per cent were supplying potassium iodide and nearly all the remainder were providing iodine to some degree through the use of iodized salt, and, as a result hairlessness of pigs was uncommon. On the other hand only about one in five included cod liver oil in the ration.

The use of some seeded pasture was noted in practically all cases but only about 20 per cent grew legumes for this purpose. This was to be expected since alfalfa is a relatively new crop in this district. Seeded pasture, other than legumes, was generally of a cereal grain type.

Housing.—Housing was the least satisfactory aspect of swine management in the Bonnyville district (table 2). In no instance where less than six sows were kept was ideal housing to be found and, in general, the frame and log structures which were not insulated were found to be quite unsatisfactory. The heavy losses in young pigs encountered during the spring of this year were associated to some extent with the inadequate housing.

Winter Farrowing.—Most producers have attempted to raise two litters per year but only a relatively small proportion found it feasible to farrow sows during January or February. The most common practice has been to have spring and fall litters. As was to be expected, more winter farrowing was found in districts where farms had been established longer and were beyond the pioneer stage of development. Twenty-five per cent of these farms carried out some winter farrowing while in the more recently settled districts the corresponding figure was 16 per cent.[1] Results from winter farrowing are unsatisfactory where housing facilities are inadequate.

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[1] These percentages apply to the number of farms and not to the proportion of the total number of sows.

Age at Marketing.—Those farmers carrying four sows or less required seven months to finish their hogs for the market whereas those having five sows or more succeeded in finishing them fifteen days sooner, or in six and one-half months. This suggests that the management of the hog enterprise on those farms having four sows or less could be improved. There was a tendency for the larger producers to provide better housing, to feed more carefully and to carry better breeding stock than the smaller producer.

TABLE 2.—TYPES OF HOUSING FOR SWINE IN THE BONNYVILLE DISTRICT, ALBERTA

Type of housing	SIZE OF ENTERPRISE		
	2 to 3 sows	4 to 5 sows	6 sows or more
	%	%	%
Log or frame, insulated and ventilated	....	....	22
Frame, not insulated	12	26	25
Log, not insulated	41	33	22
Temporary straw	26	19	28
Use of main barn	21	22	3
Total	100	100	100

Expansion.—The Bonnyville area lies in Crop Reporting District Number 13. The hog population of this district was increased more than 2·5 times between 1920 and 1930 in keeping with the general expansion which was taking place. However, during the early 'thirties this enterprise suffered as did other farm enterprises and did little more than hold its own. The outbreak of war, however, afforded a new stimulus. The accompanying table (table 3) indicates the phenomenal increases which have occurred in the number of hogs marketed throughout the province for the years 1938 to 1942, the increase for the province being about 1,400,000 head.

TABLE 3.—NUMBER OF HOGS MARKETED BY CROP DISTRICTS IN ALBERTA, 1938–42(¹)

Crop district	1938	1939	1940	1941	1942
	No.	No.	No.	No.	No.
1	4,633	423	2,681	9,811	17,053
2	25,635	42,505	70,986	96,906	115,584
3	9,764	11,254	20,183	32,118	35,676
4	20,173	23,671	37,679	51,226	54,406
5	3,075	4,041	7,775	14,380	17,502
6	86,227	102,181	179,822	248,001	309,409
7	22,884	36,664	54,921	76,335	78,492
8	146,755	186,926	277,168	334,559	331,000
9	43,619	50,292	82,288	101,514	103,700
10	107,532	149,655	196,224	237,701	223,542
11	148,562	176,224	244,422	308,739	342,691
12	9,707	12,960	22,770	30,118	33,719
13	38,461	53,460	78,909	109,519	122,184
14	76,949	99,684	143,035	185,169	228,214
15	6,847	7,758	14,983	21,803	37,224
16	32,024	22,196	51,536	89,154	131,884
17	10	4	....	....	46
Total for province	782,857	979,898	1,485,382	1,947,053	2,182,326

(¹) Data compiled by Marketing Service, Dominion Department of Agriculture.

From Table 3 it may be seen that the northern areas of the province have considered an expansion of hog production quite profitable.[1]

During the year ending May 31, 1943, it was found that the farmers interviewed in this study have increased the number of sows kept from an average of almost 3 to over 4 sows during that period or an increase of 1·3 sows per farm.[1] The Bonnyville district may be expected to market more hogs during the coming year than ever before, barring unforeseen events. To date, the losses of young pigs between farrowing and weaning of 25 per cent have been comparable with the provincial average.

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[1] For a discussion of this point see "Profitableness of Hog Production in the Bear Lake District of Alberta" by Elizabeth Low, Economic Annalist, August 1943.

The expansion within the past year was brought about to a large extent by the smaller producers. When questioned in regard to further expansion they reported that it would not be as great during the coming year due to: (1) a possible shortage of home-grown grain to support further expansion, (2) a shortage of labour and (3) a lack of proper housing. In spite of these difficulties they expected an increase of at least 15 per cent over last year.

Admittedly, any considerable rise in grain prices relative to the price of hogs would become a definite limiting factor in a further expansion but as far as these more northerly areas are concerned hogs seem destined to play a larger part in the business of these farms as agricultural expansion continues.

Conclusions.—Most producers in the Bonnyville district who were carrying two sows or more had either realized the value of, or were experimenting with, improving the farm rations with protein and mineral supplements. While the adequacy of the feeding as it was being carried on was not determined in this study a definite trend toward better feeding practices was evident. There is a definite lack of satisfactory sanitation and proper housing. Improved housing would result in: (1) a larger proportion of sows farrowing twice per year, (2) a better control over losses, and, (3) a reduction of the time required to fatten for marketing. At present the time required to put a hog on the market in this area is on the average from 6·5 to 7 months.

By the year 1942 hog production in Crop Reporting District 13 was increased to 318 per cent of the 1938 level but this expansion may be expected to slacken by the summer of 1944. By that time production in the more restricted area around Bonnyville will probably have increased an additional 15 per cent over the previous twelve-month period.

This region has been an important source of Canadian pork for a number of years and the interviews of this survey lead one to believe that the long-run trend of hog production is still rising. Where the grades of cereal grains are low as they often are in many of these northern districts, the feeding of hogs is being accepted to an ever increasing extent as one of the most profitable means of disposing of this grain.

NOTES

The honey crop is estimated to be 32·5 million pounds—one of the best on record. It exceeds the 10-year (1932-41) average production of 27·3 millions by 19 per cent and the 1942 production of 24·1 millions by 35 per cent. Ontario and the Prairie Provinces produced about 80 per cent of the total estimated crop.

The Dominion Bureau of Statistics October Fruit Crop report shows that the apple crop will be 7 per cent smaller in 1943, 4,044,600 barrels, as compared with 4,330,900 barrels in 1942. The pear crop is set at 508,800 bushels which is a decline of 32 per cent from the 752,900 bushels produced in 1942. The plum and prune crop is estimated at 331,500 bushels as compared with 365,500 bushels in 1942. The peaches crop shows a drastic reduction from 1,939,200 bushels in 1942 to 571,000 bushels in 1943. The apricot, cherries, strawberries, raspberries, loganberries and grape crops are all smaller this year.

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[1] This estimate was based upon a random sample of 164 farms selling hogs to the value of $103,444 during the year, or $631 per farm. This serves as a good indication of the importance of hogs in the agriculture of the Bonnyville district.

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THE ECONOMIC SITUATION

Preliminary figures make it possible to assess the trends of prices and production in 1943. The index of wholesale prices advanced 4·3 points over that of 1942 or 4·5 per cent. The urban cost of living index was 1·6 points higher. The cost of farm family living rose 2·3 points. Wholesale prices of Canadian farm products averaged 13·4 points or 16·2 per cent higher than in 1942. The index of prices of field products was 15·1 points or 22·7 per cent higher and that of animal products was 8·0 points or 9·8 per cent higher than a year earlier. At the end of the year, the index of wholesale prices stood at 102·5 compared with 97·0 in December 1942. Since July of last year, the index has been over 100. The greatest advance in prices of farm products occurred in field products, a reversal of the situation. However this index had not reached the level of 1926 in December. Prices of live stock products continued to rise and the index at the year end was 126·1. The total index of Canadian farm product prices was 104·6 in December. It will be observed that this is 2·1 points above the index of wholesale prices of all commodities.

Retail Sales.—The index of the dollar value of retail sales was 6 per cent higher in November 1943 than in November 1942. Over the first eleven months of 1943, the value of retail sales was 4 per cent higher than in the corresponding period of 1942. Early Christmas shopping was an important factor in the November sales.

Business Activity.—The physical volume of business showed a 17 per cent increase over 1942 during the first eleven months of the year. As a result of this high level of business activity, employment has been rising. There was further expansion in November, the last month for which data are available at the time this is being written. The general index of employment at November 1 was 188·7, the highest to date. There were indications of a levelling off in manufacturing industries but increased employment occurred in non-manufacturing industries.

National Income.—National income reached the highest level in Canadian history in 1943. A tentative estimate by the Bureau of Statistics for the first eleven months of the year was $8,072 million compared with $6,818 million in the corresponding period of 1942. War expenditures and a high level of consumption of necessities of life were mainly responsible.

Subsidies.—As part of the general program of controlling inflationary trends, the policy of subsidy payments to farmers has been maintained throughout the year 1943. In some cases subsidies have been direct cash grants as in the case of dairy products. On the other hand, assistance has been indirect in the form of feed freight or fertilizer assistance designed to keep down costs of production. The immediate outlook is that subsidy payments will be continued for at least the first half year of 1944.

Food Consumption.—The Bureau of Statistics recently released a report on Civilian Food Consumption in Canada. Consumption of milk has increased substantially since the outbreak of war. Cheese consumption has remained

1944

ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Living Costs and Production Indexes Computed by Dominion Bureau of Statistics: Index of Industrial Wage Rates Published by Department of Labour

Year	Wholesale Prices 1926=100				Retail Prices		Production and Wages 1935–39		
	All commodities (1)	Farm products (2)	Field products (3)	Animal products (4)	Urban Living Costs 1935-1939 =100 (5)	Farm Living Costs 1935-1939 =100 (6)	Physical volume of business (7)	Industrial production (7)	Industrial wages rates (8)
1913....	64·0	64·1	56·4	77·0	79·7	79·6	....	....	54·9
1914....	65·5	70·2	65·4	78·3	80·0	82·0	....	....	55·6
1915....	70·4	77·9	76·9	79·5	81·6	86·3	....	....	56·0
1916..	84·3	89·8	88·8	91·4	88·3	93·6	....	....	59·9
1917....	114·3	128·5	134·5	118·4	104·5	111·6	....	....	68·7
1918....	127·4	132·6	132·0	133·6	118·3	131·4	....	....	80·7
1919....	134·0	146·7	142·6	153·5	130·0	143·0	62·3	56·0	94·8
1920....	155·9	160·6	166·5	150·8	150·5	170·7	65·9	59·7	112·7
1921..	110·0	103·7	100·3	109·5	132·5	139·5	58·1	51·6	102·7
1922 ..	97·3	88·0	81·4	99·0	121·3	127·5	69·1	65·7	95·9
1923....	98·0	81·5	73·3	95·1	121·7	127·9	74·7	71·6	98·6
1924....	99·4	88·1	82·7	97·2	119·5	125·1	73·9	70·4	99·8
1925....	102·6	101·0	98·2	105·6	120·6	123·6	79·4	76·7	98·8
1926....	100·0	100·0	100·0	100·0	121·8	120·9	87·3	85·5	99·4
1927....	97·7	102·1	99·9	105·7	119·9	119·5	92·7	90·3	101·5
1928....	96·4	100·7	92·6	114·3	120·5	118·3	102·4	100·7	102·7
1929....	95·6	100·8	93·8	112·5	121·7	117·4	109·6	108·9	104·5
1930....	86·6	82·3	70·0	102·9	120·8	113·7	95·6	92·3	105·2
1931....	72·1	56·3	43·6	77·6	109·1	103·7	81·7	77·3	101·7
1932....	66·7	48·4	41·1	60·7	99·0	97·7	68·7	63·2	94·5
1933....	67·1	51·0	54·8	59·7	94·4	95·7	69·6	65·6	89·6
1934....	71·6	59·0	53·8	67·7	95·7	97·8	82·2	80·0	90·5
1935....	72·1	63·5	57·3	74·0	96·2	97·9	89·4	88·5	93·1
1936....	74·6	69·4	65·8	75·3	98·1	98·3	98·0	97·8	94·8
1937....	84·6	87·1	88·3	85·0	101·2	102·8	107·2	108·4	101·8
1938....	78·6	73·6	69·0	81·3	102·2	101·9	98·6	98·0	104·9
1939....	75·4	64·3	54·2	81·2	101·5	99·4	106·9	107·4	105·3
1940....	82·9	67·1	55·9	85·2	105·6	108·6	124·3	132·4	108·4
1941....	89·9	71·2	56·5	95·8	111·8	114·2	165·0	177·5	119·2
1942....	95·6	82·5	66·5	109·2	116·8	119·2	202·2	228·0	127·5
1943....	99·9	95·9	81·6	119·9	118·4	121·5	235·9	273·0	....
1943									
Jan.....	97·1	87·7	70·6	116·2	117·1	....	225·8	251·6	....
Feb....	97·5	88·5	71·6	116·8	116·9	....	227·3	267·8	....
Mar...	98·5	91·2	75·4	117·6	117·2	....	231·7	269·1	....
April ..	98·9	92·3	76·8	118·2	117·6	121·1	236·9	274·4	....
May ...	99·2	92·8	77·4	118·7	118·1	....	231·8	267·8	....
June....	99·5	94·4	79·4	119·4	118·5	....	232·4	267·2	....
July....	100·1	96·4	82·6	119·4	118·8	....	236·3	270·2	....
Aug....	100·4	97·5	84·9	118·6	119·2	121·9	241·0	276·8	....
Sept...	101·2	97·9	86·1	117·6	119·4	....	236·7	280·9	....
Oct.....	101·9	103·6	90·8	125·0	119·5	....	239·5	283·3	....
Nov....	102·4	104·2	91·3	125·7	119·4	....	242·9	282·5	....
Dec....	102·5	104·6	91·7	126·1	119·3	....	248·8	282·0	....

1. See Prices and Price Indexes 1913-1928, pp. 19-21, 270-289 and 1913-1939, p. 17.
2. Wholesale prices of Canadian products of farm origin only. See prices and Price Indexes 1913-1937 p. 52, and Monthly Mimeographs 1942-43.
3. Wholesale prices of grain, fruits and vegetables.
4. Wholesale prices of animals and animal Products.
5. See An Official Cost of Living Index for Canada, 1940.
6. Index numbers of Farm Family Living Costs 1913-38 and Farm Living Expenditures 1934 and Farm Family Living Costs mimeograph.
7. Monthly Review of Business Statistics, p. 8, and Monthly Indexes of the Physical Volume of Business in Canada, supplement to the monthly Review of Business Statistics, November, 1932. Yearly index numbers for 1942, subject to revision.
8. Department of Labour, *Labour Gazette,* December 1943.

constant, the increased production being sent to the United Kingdom. Butter consumption rose rapidly until December 1942 when rationing was started. Total consumption of meats has risen, particularly beef. There has been little increase in the consumption of bacon since most of this product is shipped to Britain and the effect of increased payrolls and employment is therefore not apparent in the consumption of pork. The quantity of poultry used has risen slowly but steadily. Consumption of eggs remained at pre-war levels until 1943 when there was a sharp upturn.

Potatoes were consumed at the rate of 191·7 pounds per person in the pre-war period 1935-39, and the rate of consumption increased to 202 pounds in 1940 and 1941. In 1943, the consumption per capita was 205·1 pounds. Tomatoes and citrus fruits showed a large increase after the outbreak of war but the use of these commodities was lower in 1943 due to short supplies.

The total civilian intake of food per person per year was 999·8 pounds in the period 1935-39. It rose to 1,025·8 pounds in 1941 and to 1,045·3 in 1942. In 1943 the average total intake was 1,038 pounds per civilian. The reduction was in part due to a poor vegetable crop and in part to more general rationing of food.

Live Stock Marketings.—Sales of cattle at yards and plants in Canada in 1943 were 1,184,802 head compared with 1,173,714 in 1942. Marketings of calves were lower in 1943 at 641,950 against 763,220 in the previous year. Sheep moved to markets in larger numbers last year than in 1942, 876,983 head compared with 818,375. The total number of hog carcasses graded in 1943 was 7,147,546 whereas in 1942 only 6,228,163 carcasses were graded.

Dairy Production.—Production of creamery butter in 1943 is estimated at 313,309,928 pounds compared with 284,591,732 pounds in 1942. Increases occurred in all provinces except British Columbia. In Ontario, production was 82,498,082 pounds against 81,025,298 pounds in 1942. In the Province of Quebec, production last year was 85,588,776 compared with 73,109,919 pounds in the previous year.

Cheddar cheese production was reduced in 1943, the final figure being estimated at 162,344,504 pounds whereas in 1942, 206,215,228 pounds wede produced. Ontario produced 105,097,578 pounds compared with 128,349 448 pounds in 1942. In Quebec production declined from 64,554,802 pounds to 48,440,298 pounds. Reductions were recorded in all other provinces in which cheddar cheese is produced.

Figures on the production of concentrated milk are not available as this is being written. In fact the figures for production of cheese and butter are still preliminary estimates.

Farm Machinery.—In 1943 the original allocation of materials for farm machinery was 25 per cent of the 1940 tonnage for new machines and 150 per cent for repair parts. The sizes and models were reduced to 60 per cent in an effort to meet the reduction in materials. As the seasons developed, it became necessary to secure additional allocations and this allocation finally represented 35 per cent of 1940 for new machines and 165 per cent for repairs.

The outlook for 1944 is better. An allocation has been made of approximately 80 per cent of the 1940-41 tonnage for new machines and 150 per cent of that tonnage for repair parts. There may also be some relaxation of the limitation of sizes and models. Moreover some of the smaller machines have been removed from the ration restrictions. About half the Canadian supply of farm machinery is imported from United States and in view of this, it is worthy of note that Canadian farmers have received about the same proportion of farm equipment as has been made available to farmers in United States. This improvement in the supply of farm machinery along with assurances from National Selective Service regarding the labour supply give ground for hope of even greater accomplishments on the farm front.

AGRICULTURAL POLICY: SUBSIDIES AND BONUSES 1943[1]

FRANK SHEFRIN

Since the outbreak of war agricultural policy has been and is designed to bring about increased production of the desired products as the need arises. Boards, committees, co-ordinators and administrators have been established to provide guidance in the agricultural war effort. At the same time, it has been the policy of the Dominion Government to prevent uncontrolled inflation, through such means as the setting up of price ceilings. The establishment of of program of price control has, in turn, led to a widespread use of subsidies. These subsidies are designed not merely to hold the prices down but to maintain production.

Prior to 1943 both the Department of Agriculture and the Wartime Prices and Trade Board were paying subsidies to the primary producer—the farmer. In the early part of 1943 an agreement was reached between the Minister of Agriculture and the Minister of Finance whereby the Department of Agriculture assumed additional responsibilities relative to the supply and distribution of food products under wartime conditions. A new Board—the Agricultural Food Board—was set up on March 1, 1943. One of the functions of this Board was to determine, allocate and pay subsidies to farmers.

It was estimated that the Dominion Government expended in the form of subsidies and bonuses approximately $84 million for the calendar year 1942. Some of these subsidies were straight cash grants, such as in the case of Wheat Acreage Reduction and Prairie Farm Income payments, milk, butter and canned goods subsidy payments. Other subsidies were in the form of reduced production costs, for example, feed freight assistance, fertilizer subventions, wheat drawback assistance. During the year 1943, subsidy payments were continued, the exceptions being that the export subsidy on eggs was absorbed in the price as set by the Special Products Board. On the other hand, many new subsidies were paid during 1943.

Feeds

The payment of the freight subsidy of $4.50 plus per ton on Western wheat, oats, barley, rye, wheat bran, wheat shorts, wheat middlings, and No. 1 and No. 2 feed screenings for feeding to live stock or poultry shipped into the five Eastern Provinces and British Columbia, was continued in 1943. This policy of freight payments on the movement of western feed grains is to be continued indefinitely.

In order to encourage the manufacture of alfalfa meal to meet protein requirements a subsidy of $3 per ton has been paid since February, 1943, to alfalfa meal processors on all alfalfa meal produced in Canada and sold to buyers as feed or part of the feed mixture.

The Dominion Government has been paying a per bushel subsidy to all farmers in Eastern Canada who buy feed grains under the plan known as plan B. This is an incentive to farmers in Eastern Canada to buy Western feed grains as soon as possible and to store them on their own farms so that the 1943-44 winter's live stock feed requirements would be met and the load on transportation facilities evened out. The subsidy commenced with 3 cents per bushel on purchases made in July, 1943, and reduced by ½ cent per bushel monthly on wheat, oats, and barley for feeding in Eastern Canada. This subsidy applied only from the date on which the Eastern buyer took possession of the grain and assumed carrying charges.

Under Plan A the Dominion Government paid storage and incidental elevator charges on substantial quantities of Western feed grains that had been moved to the east, to be held as an emergency reserve and used in the event of difficulties developing from transportation bottlenecks or other causes.

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[1] For the earlier story see article on Agricultural Policy: Prices, Bonuses and Subsidies in Economic Annalist, December, 1942.

Due to the increased price of wheat in 1942, a drawback of 8 cents per bushel was paid on western wheat purchased for feed used in Canada on and after August 1, 1942. This was to enable feed dealers, processors, and mixers to maintain July, 1942, prices on sales of their feed products containing wheat. With the announcement of the new and higher price on wheat, the Dominion Department of Agriculture on November 15, 1943, increased the drawback to 25 cents per bushel on western wheat. The 25 cent subsidy does not apply to some of the higher grades of milling wheat but only on those grades having a Canadian Wheat Board ceiling price basis in store Fort William—Port Arthur, or Vancouver, not higher than No. 4 Northern.

Wheat Acreage Reduction Payments.—Using 1940 as the base year, the Dominion Government paid $2 per acre for every acre taken out of wheat and put into other grains and summer fallow.

Equalization Fee Payments.—For the purpose of maintaining ceiling prices on Western oats and barley in the Canadian domestic market, and at the same time pass on to producers the advantage of higher prices obtained in the export of these grains, the Canadian Wheat Board collected equalization fees on the export permits granted for oats and barley out of Canada. This policy was announced on April 16, 1943, and a special fund was set up by the Canadian Wheat Board into which equalization fees were paid. These funds were to be distributed on a pro rata basis to the western growers who delivered oats and barley between April 1 and July 31, 1943, inclusive. As of September 17 there was a change in the plan for the 1943-44 season. It was decided to make advance payments against the equalization fees to be collected as from August 1, 1943. Thus, at the time of delivery, Western farmers will receive payment of 10 cents per bushel on oats and 15 cents per bushel on barley in addition to the market prices. These additional payments on oats and barley represent a guaranteed advance against equalization fees being collected by the Wheat Board on exports of these grains to the United States. The cost of this program to the Dominion Government will depend upon the quantity of coarse grain exported. The surplus, if any, in the equalization funds in excess of 10 cents on oats and 15 cents on barley, will be distributed to farmers after July 31, 1944. Arrangements have been made also by the Wheat Board to pass all the benefits of the advance equalization payments to farmers who sell oats or barley to another farmer or feeder who intends to use them for feed and is not purchasing for resale. Payments in this instance are made on the basis of net bushels and it is necessary for the grains to be hauled to a licensed elevator where it can be weighed and graded, dockage established, and proper entries made in the Wheat Board permit books by the elevator agent.

Fertilizer Subventions.—The fertilizer policy fits into the general program for encouraging the expansion of feed production. In order to encourage the maintenance and expansion of production of legume crops because of their value as protein feeds, the payment of subventions on fertilizers to farmers was continued in 1943. Farmers in the five eastern provinces and in the Province of British Columbia who used fertilizer to increase the yields of pasture clover, alfalfa, grass meadows, field corn, spring wheat, oats, barley, spring mixed grains, mangels and turnips for feed for live stock received payments based on 30 cents per unit of nitrogen and 15 cents per unit each for phosphoric acid and potash in a ton of fertilizer. Subvention payments on purchases of fertilizers were limited to a minimum of one-quarter ton of any one kind or analyses of fertilizer and a total of five tons to any one farmer. This policy was rescinded at the end of the year, and in January, 1944, it was replaced by a transportation assistance subsidy.

In order to encourage the use of lime fertilizers, assistance was given to farmers in Eastern Canada and British Columbia. This payment is made through the Provincial Governments. The Dominion Government reimburses one-half the amount paid out in transportation and production assistance up to 75 cents per ton on either account. This policy has been in effect since June, 1943.

Dairy Product Subsidies

Prior to May 1, 1943, subsidy payments on market milk and butter were handled by the Foods Administration, Wartime Prices and Trade Board. After the establishment of the Agricultural Food Board, the determination, allocation and payment of subsidies to primary producers became the function of the Food Board. Between May 1 and October 1 a subsidy payment of 25 cents per 100 pounds was paid to producer-distributors of fluid milk. Beginning October 1, 1943, and continuing until April 30, 1944, a 55 cent subsidy per 100 pounds is paid to producer-distributors of fluid milk and for milk bought by distributors for fluid milk consumption as the Agricultural Food Board may direct. In connection with the latter subsidy the Department of Agriculture has indicated that it will apply in all areas where it is found necessary in order to maintain a constant supply of milk. In other areas where the subsidy was 25 cents per 100 pounds this subsidy will continue to apply.

During the months of March and April, 1943, a subsidy of 25 cents per 100 pounds was paid on all milk used for concentration purposes. his was raised to 30 cents per 100 pounds of milk for the period October 1, 1943 to April 30, 1944. In the case of butterfat the subsidy was 8 cents a pound up to December 31, 1943. For the period January 1, 1944 to April 30, 1944, the payment is 10 cents per pound butterfat.

In order to maintain cheddar cheese production it was found necessary to pay a subsidy of 30 cents per 100 pounds on milk used in the manufacture of cheddar cheese. This subsidy became effective October 1, 1943.

It is expected that these subsidies together with the price at which milk sells make it possible for farmers to produce sufficient milk to provide fluid milk, canned milk, cheese and butter necessary to feed the civilian and armed population, as well as export considerable quantities.

In order to simplify the method of payment of subsidies, the creameries, cheese factories and other milk processing plants advance the subsidy in terms of higher prices and in turn are reimbursed by the Dominion Government.

Cheese quality bonus payments which were started on July 1, 1939, were continued during the year 1943. This provides for quality premiums of 2 cents per pound for 94 score cheese and 1 cent per pound for 93 score cheese. Assistance under the Cheese Factory Improvement Act was continued in 1943.

Fruits and Vegetables

Apples.—Each year since the commencement of the war the Dominion Department of Agriculture has helped to finance processing and marketing of the commercial apple crop. Canada formerly shipped a large proportion of her apple crop to the United Kingdom. However, with the outbreak of war this market was greatly reduced as the shipping situation became more acute. Great Britain took less and less Canadian apple products.

Since the fall of 1939, the Dominion Department of Agriculture has given assistance in various forms: Aided in processing Nova Scotia apples; purchased British Columbia apples for relief distribution and assisted in the export of British Columbia apples to an agreed amount; assisted in meeting storage costs. This has been done to help maintain the Canadian apple industry during the war.

There have been apple agreements between the Dominion Department of Agriculture and the Provincial Marketing Boards of British Columbia and Nova Scotia since 1939. These agreements have been renewed for the marketing year 1943-44. Minimum prices have been guaranteed for British Columbia apples for a total quantity of 4¼ million boxes of apples, less any quantity exported. In addition, the industry will receive a bonus of 15 cents per pound on choice quality evaporated apples produced in excess of 750,000 pounds, and up to 1½ million pounds.

The Nova Scotia Agreement is similar to that of last year with a higher guaranteed price for choice quality evaporated apples—28 cents per pound as against 25 cents last year—when purchased by the Government for export to Britain. Tree removal bonus payments started in 1942 of $2 per tree are again provided.

Berries for Jam.—In order to encourage adequate production of berries for jam in the 1943 season, subsidies were paid to growers of berries and currants on delivery of the 1943 crop to jam manufacturers. These subsidies are paid by manufacturers and are subsequently recovered from the Government. The refunds are pro rated with sales of jam because only fruit used in pectin and compound jam and pectin jelly is eligible for subsidies.

In British Columbia the rates of payments are (1) strawberries—6 cents per pound of No. 1 jam grade and 4 cents per pound of No. 2 jam grade, added to a minimum net purchase cost of 6 cents per pound; (2) raspberries—3 cents per pound, added to a minimum net purchase cost of 11 cents per pound; (3) loganberries—3 cents per pound, added to a minimum net purchase cost of 6 cents per pound.

In Ontario the rates of payment are: (1) strawberries—3 cents per pound added to a minimum net purchase cost of 9 cents per pound or 11¼ cents per quart—purchases by quart to be calculated as 20 ounces; (2) raspberries—3 cents per pound added to a minimum net purchase cost of 10 cents per pound or 11¼ cents per quart—purchase by the quart to be calculated as 18 ounces; (3) loganberries—3 cents per pound.

Canning Vegetables.—The subsidy paid to producers of vegetables for canning has been renewed and increased in 1943. The subsidies paid are the following: tomatoes, $3 per ton ($1 in 1942); corn, $4 per ton ($2 in 1942); peas, shelled, $10 per ton ($7.50 in 1942); peas, straw weight, $2 per ton ($1.50 in 1942); green and wax beans, $7.50 per ton ($5 in 1942). The subsidies are paid to growers by the canners in addition to the canners net purchase cost. The canner, in turn, recovers the subsidy payment from the Dominion Government. Refund arrangements were different in 1942 when the Wartime Prices and Trade Board paid the subsidy. Growers who can their own raw product are eligible for subsidy if they hold a manufacturer's sales tax license. Subsidies paid by processors must be in addition to at least the 1941 prices paid by them.

Wool

In order to encourage production of a greater volume of wool of a quality suitable for manufacturing purposes, a bonus of 4 cents per pound on the 1943 wool clip was being paid to farmers. The payments were only made in the provinces co-operating under this scheme, that is, where the Provincial Government has agreed to pay half (2 cents per pound) of the total bonus.

Other Forms of Subsidies

The Wartime Prices and Trade Board, through the Commodity Prices Stabilization Corporation, is providing assistance to farmers by means of subsidy payments on materials and implements purchased by farmers for use in farm production and on certain farm products. Special arrangements have been made for the payment of subsidies on United States freight on agricultural implements and parts, and import subsidies have been paid on agricultural equipment including generators, electrical fence controllers, tractor parts, miscellaneous hardware. A shortage of supplies of burlap has increased the use of cotton for bags and the Corporation has been paying subsidies on imports of cotton fabrics used in making bags.

The Corporation also paid subsidies on feeds imported, such as corn—the by-products are feed meal and oil cake. Import subsidies are paid on certain fertilizers shipped into the five eastern provinces and British Columbia. A domestic subsidy was paid to manufacturers or wholesalers in the five eastern provinces of certain specified fertilizer products when the transport costs incurred in securing these exceed the transport on materials obtained formerly from normal sources of supply. In order to keep the cost of pesticides down import subsidies have been paid.

On April 1, 1943, the Corporation started to pay a subsidy on crude oils and petroleum products imported into the Prairie Provinces.

In order to keep down the cost of containers, such as cheese boxes, fruit and vegetable baskets, subsidies have been provided.

A subsidy was being paid on the 1943 crop of maple syrup which will make it possible for processors to pay specified farm prices to primary producers.

To enable processors to pay a higher price to growers for white beans a subsidy of 50 cents per bushel was paid.

The Corporation has paid a subsidy to cover the additional cost involved in diverting the supplies of beef from normal markets to areas of acute shortage. The subsidy has been cancelled recently. Similar measures have been taken for butter.

Summary

In summation, subsidy payments have been used to meet a variety of situations which have threatened the stability of the retail price ceiling. Subsidies have been paid to compensate for higher import costs resulting from increased shipping charges, higher prices in country of origin, and necessity for use of expensive substitutes. Subsidies have been paid to stimulate the production of high food value products such as milk, cheese, butter, canned goods and so forth. Subsidies have been used to maintain the flow of domestic supplies by financing transportation costs from surplus to deficit areas, and by equalizing the returns to sellers of domestic and export sales. The subsidy program is integrated with other types of controls such as the general price, wage control and heavy taxation measures designed to prevent inflation. Specifically subsidies are intended to prevent minor breaks of the ceiling which might quickly spread to other products, and increase the cost of living with consequent pressure for higher wages and the ultimate break of the entire ceiling plan.

The Conference of the United Nation's Relief and Rehabilitation Administration which took place at Atlantic City during the latter part of November 1943 was the second important international gathering held in the United States during World War II. The first, the Conference on Food and Agriculture had already established a working basis for close and continued collaboration among all the United Nations. In setting up the UNRRA, the United Nations agreed to bring relief to victims of war immediately upon liberation of the countries enslaved by the enemy. According to the estimates, total import requirements for Europe from all sources will amount to over 45 million tons of foodstuff, feeds, oils, fat, chemicals, fertilizers, rubber, wood, paper, hides, leather, clothing, coal, metals, minerals, machinery, vehicles, seeds, drugs and hospital supplies. One of Canada's major contributions will be food—especially wheat.

WILL IRRIGATION FARMS IN ALBERTA PAY THE COST OF THEIR DEVELOPMENT?

C. C. Spence, B. H. Kristjanson and J. L. Anderson

Resettlement of depopulated areas in certain parts of southern Alberta appears imminent if accommodation is to be made for any considerable increase in the number of people who desire to farm in the province[1]. This time, however, it would appear that the Crown's initial investment in the settler must be not only the quarter section of land, but the quarter with water made available for the larger part of its irrigation. Just how much the settler can be expected eventually to pay on the investment in the land and the capital costs of its irrigation development will depend on several factors, not the least of which is the type of farming which develops in the area[2]. Within these areas which appear physically feasible for irrigation, the type of farming is largely determined by the kind of markets available.

There are eleven irrigation districts in southern Alberta varying in size from 160,000 acres under irrigation in the Eastern Irrigation District down to less than 3,500 acres in the Mountain View District. An irrigation district is a contiguous area in which several farmers are provided with water from a common source for irrigation, and the control of which is vested in an organization set up for the purpose. In all, including approximately 68,000 acres of irrigable land in 586 small private irrigation works, there are nearly one-half million acres of irrigated land in Alberta.

The study on which observations made in this article are based, covers a cross section of these irrigated farming areas and includes about 550 farms located in five of the districts. These farms are representative of all types of irrigated farm organization found in the region. The statements on the businesses of these farms pertain to the year ending May 1, 1940, and reflect a period not affected by wartime economy, or arising out of this, various governmental orders which have since influenced farm practices and price relationships. This does not imply that the 1939-40 cost-price relationships were in satisfactory adjustment or that the prices and the adjustment of these will fall back after the war to that level; but for a conservative appraisal of the probable relative incomes to be expected over a period of time, it is submitted that this 1939-40 period should be as satisfactory a period as any.

Specialty Crop Farms.—Farming in the Taber Irrigation District is largely of the Specialty Crop type. This district lies some thirty miles east of Lethbridge. It is on the western edge of a semi-arid area referred to as largely depopulated.

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(1) By further development of the St. Mary and Milk Rivers storage and irrigation works it is estimated that an additional 350,000 acres can be irrigated. St. Mary and Milk Rivers Water Development Committee Report, Dominion of Canada, 1942. In addition to the 350,000 acres other advices place the additional acreage which can be irrigated from the Bow River by enlarging the Canada Land and Irrigation Company's system, at 192,000 acres. These are two of the larger irrigation projects receiving attention, the development of which will make room for more settlers. Completion of the two will double the present irrigated acreage.

(2) In any settlement scheme for rehabilitation either on the prairies, in the parkland regions, or in regions of the grey wooded soils of the north and west, it is anticipated that the Crown will be called upon to advance a considerable proportion of the funds needed for development. The proportion of these funds which the settler will be able to repay is contingent upon the relative opportunities which become his for earning income. The investment for such development in relation to the returns to both the individual and the community should be weighed with alternative costs and benefits in the development of areas elsewhere in the province or the other western provinces.

In an approach to such comparisons as described in the foregoing, studies are being carried on by the Economics Division in co-operation with the Provincial Universities in Alberta and Saskatchewan. These include an examination of the extent of the development of individual farms, income, level of living, debt carrying capacity, contributions to community organizations and other related subjects. The areas receiving more specific attention have been those considered potential for new settlement, and in this connection more than 2,000 farm businesses have been studied during the past four years in the irrigated areas and in the newer settled parts of the woodland soils in northern Saskatchewan and northern and western Alberta.

In common with the Alberta Railway and Irrigation District to the west, the Raymond and the Magrath Districts to the south, and the Lethbridge Northern, the Taber area is able to produce beets for sugar factories at Raymond and Picture Butte. There are canning factories at Taber and Lethbridge. In 1939-40 in the Taber area nearly two-thirds of the total returns of the irrigated farms were derived from specialty crops, chiefly beets. The total income above the current operating costs plus an allowances for capital maintenance, of Taber specialty crop farms, with less than 75 acres of irrigated land, averaged about $1,100, and the corresponding figure for farms 125 acres and over of irrigated land averaged over $2,500 per farm. Farm family cash living costs averaged for the smallest sized farms approximately $800 and in the largest sized farms about $1,500 per farm, leaving average surpluses on the year's operation for paying on debts or for savings varying from approximately $350 for those farms with less than 75 acres of irrigated cropland to over $1,000 for farms with 125 acres or more irrigated. In view of the possibility of such surplus earnings, in addition to providing a relatively high level of living, it is obvious that the estimated costs for developing additional irrigated areas of $44 an acre[3] can readily be met. A farm organized on a specialty crop basis makes this possible. A similar situation in respect to farm type and economy exists in the Coaldale area.

Grain Farms.—North of the Taber area beyond the Oldman River lies the Canada Land and Irrigation District and the New West District, and to the east over the Bow River, is the Bow Slope Area. In these districts, for the year under review, 73 farms of the Grain type were studied. More than three-fourths of the gross returns were derived from the cash sales of grain, chiefly wheat. On an average measured in irrigated acres these farms were twice as large as the beet farms.

From these grain farms for the year 1939-40 the income earned above current operating costs plus allowance for capital maintenance, averaged for those with less than 125 acres irrigated, approximately $225, and for farms with 125 acres and over irrigated about $660. However, since the farm family cash living costs varied from an average of about $400 per farm for the smaller farms to over $660 per farm for the larger farms, the result was a deficit rather than a surplus for paying debts or for savings. It is obvious that in such a type of farming for the usual operator very little if any payment on capital construction costs of irrigation, or land development work can be expected from a settler. While it may be argued that wheat selling at 52 cents per bushel in the district in 1939-40 placed these farms in an unusually unattractive position nevertheless, the fact cannot be ignored that judged by what was spent on living, the farmers in this area were forced to live on much less than were those operating farms with beet contracts.

Mixed Crop-Live Stock Farms.—Where the sales of crops made up more than one-half and less than three-quarters of the gross returns, a farm was described as a "mixed" type. In the irrigation districts discussed in the foregoing the income above current operating costs plus capital maintenance allowance averaged, for farms of less than 125 acres of irrigated crop land, slightly more than $400, and for farms, over 125 acres in size, about $650. With the farm family cash living costs deducted there was a small surplus to pay on indebtedness or for savings, for the larger farms of this type.

For the farms of the Mixed type (not included among the farms described in the previous paragraph) in the vicinities of Brooks and Tilley where the crops included also peas, beans and others grown for seed for which a special market

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(3) Total estimated outlay per acre for 345,000 additional acres to be irrigated by further development of St. Mary and Milk Rivers water diversion and irrigation works, at 1939-40 costs, p. 79, St. Mary and Milk Rivers Water Development Committee Report, Dominion of Canada, 1942.

has been developed at Brooks, the net farm income including the living costs averaged about $1,070 and deducting the farm family cash living costs of $866, left a surplus of approximately $200. From farms similarly organized a small payment on capital costs of the development of the irrigated unit might be expected.

Live Stock Farms.—Where sales of live stock and live stock products made up more than 50 per cent of gross returns of the year's business, farms were described as of a Live Stock type. Live stock farms in the Canada Land, New West and sub-areas of the Eastern Irrigation District of more than 125 acres of irrigated cropland gave an average of about $300 surplus above current operating and farm family cash living costs plus capital maintenance allowance. Live stock farms of less than 125 acres in size also gave a small surplus available for meeting indebtedness or for savings. A fairly substantial proportion of the capital costs in the development of irrigated land might be expected from farms organized similarly to these larger farms of the live stock type.

During the year 1939-40, while prices of live stock and live stock products were below the long time average, they were relatively higher than grain prices, and consequently the ratio of live stock prices to grain prices favoured live stock production. This in part explains the higher relative incomes obtained from irrigated farms which emphasized live stock compared to mixed, and crop farms without specialty crops. However from both a farm management and an agronomic standpoint live stock on irrigation farms seem desirable for the full utilization of the abundant fodder crops which can be produced irrespective of location and also for the maintenance of soil fertility; in the long run, it makes possible comparatively higher incomes and greater stability.

Cost Price Trends.—Prices received for farm products may settle at a level somewhat higher than that which prevailed in 1939-40; with accumulated experience in irrigation farming the volume produced per unit of irrigated land may be increased; the total result would be greater gross income. No doubt, offsetting these will be higher farming costs than those which were experienced in 1939-40, only a short time removed from the depression years, in spite of economies of production which may be brought about by the accumulated experience to which reference has been made; higher family living costs associated with better homes and increased living conveniences will be encouraged by greater gross incomes. Therefore, it is unlikely that the cost-price relationships and the net results of other conditions associated with obtaining the means to service indebtedness will differ greatly from that of the period for which the experiences on irrigated farms of different types of organizations have been studied.

To sum up, it may be emphasized that above current operating and farm family living costs, plus allowance for maintenance of capital for the continuity of the farm business, on the 1939-40 farm businesses surpluses occurred ranging from $1,000 to $350 on the beet farms, and $300 to about $40 on the live stock farms. There was a small surplus on the larger farms of the Mixed type, but a deficit on the smaller farms. On the other hand there were average deficits for both the larger and smaller size groups of farms of the Grain type.

It may be anticipated that with a growth of population additional acreage of beets and canning factory crops will be required, and as a result markets for these crops opened in other areas. However, based on experience elsewhere such very favoured markets cannot be opened to all. It would, therefore, seem that in the plans laid for the re-settlement of areas feasible for irrigation from the standpoint of the physical characteristics of the land, costs in irrigation engineering, and adequacy of water resources, that the predication of such schemes should be based on the type of farming most likely to develop. This appears to be one characterized by a favourable combination of crop and live stock enterprises, which will permit not only earning a maximum income under limitations set by markets available, but also some stability in this income. For such a combination it would appear, too, that the minimum irrigated acres per farm should not be less than 125 acres. From this size and type of organization, it would appear that, with cost-price relationship that existed at the beginning and first year of the present war, the newly established irrigation farmers could not be expected to repay more than one-half of the developmental costs of the projects. Such projects, however, may prove to be relatively good investments when the total economic and social gains can be correctly appraised, with the appraisal made in the light of alternative costs and benefits to be derived in establishing settlers elsewhere on the prairies, in the parkland, or in the newer settled regions of the woodland soils of the Prairie Provinces.

ANOTHER LAND BOOM?

J. Coke

The rise and fall of farm land values has affected the fortunes of many farmers. The cash value of land and its improvements has represented the life-time savings of a great many. When prices decline, a farm purchased at a high price level has often become a financial nightmare even when a substantial down payment has been made. That one transaction may have blighted the future of those affected. The young farmer who wants to start farming when prices are high, should take heed of the old saying that "whatever goes up, must come down." This does not mean that farms ought not to be bought in periods such as the present but the down payment must be higher than otherwise might be considered adequate. High land values arising from judicious land improvement and rising demand for farm products resulting from expanding markets reflect the earning capacity of farms. This is a desirable situation. It is not a high level of land values or a high level of prices of farm products that creates trouble for the new land owner. It is the fluctuation in prices of agricultural products in relation to a contractual payment which often must be met out of falling revenue. Surplus funds should be used to pay off existing debt and when that is accomplished they may well be held for investment when conditions become more stable.

The significance of these facts becomes apparent when one reviews the trend of prices of agricultural land in Canada. In 1910 the average value of land in occupied farms as reported by Crop Correspondents of the Dominion Bureau of Statistics was $33 per acre. The highest average, $74 per acre, was reported in British Columbia and the lowest $19 was reported in New Brunswick. In Ontario, the average value of land was placed at $48 and in Quebec the comparable figure was $43 per acre. These figures may not be absolutely representative but for comparison they are quite adequate.

World War I.—By 1914 the average for all Canada had risen to $37 per acre. Land values in British Columbia had jumped to $150 per acre. The lowest values reported in that year were registered in Alberta—$21 per acre. In New Brunswick the figure had risen to $26 while in Ontario an increase of $6 per acre was recorded and in Quebec the rise was $4 per acre.

In 1915 and 1916, the average for all Canada was $35 and $37 per acre respectively. The changes varied in degree in the different provinces. In Prince Edward Island and New Brunswick land values eased off in 1915 and this was also the case in Manitoba. The decline in British Columbia was sharp amounting to $25 per acre. Land values in Quebec and Ontario continued to rise.

In 1917 all provinces except New Brunswick reported higher values and in the latter province there was no change. The boom was on. The average of occupied farm lands in Canada was $38 per acre and from that point land values soared to $48 per acre in 1920. British Columbia reported average values of $175 per acre, Ontario and Quebec $70. Prince Edward Island $49, Nova Scotia $43, New Brunswick $35, Manitoba $39, Saskatchewan and Alberta $32. That was the peak.

In 1921 the bubble burst. The average for all Canada dropped $8 per acre, or from $48 to $40 per acre. In British Columbia the drop was $20 per acre. In Ontario average land values fell from $70 to $63 and in Quebec the reduction was from $70 to $59. On the Prairies, the decline was from $4 to $5 per acre. In the Maritimes it varied from three dollars in Prince Edward Island to eight dollars in Nova Scotia. This in itself was bad enough but when reviewed in the light of the decline in prices between 1920 and 1921, it was a major disaster. The index of prices of Canadian farm products was 160·6 in 1920. In 1921 it averaged 103·7. By 1923 the average was $37 per acre over the country as a whole just what it was in 1914. Interestingly enough land values in the different provinces showed considerable variation in this period. A new peak of land values in Prince Edward Island was reached in 1923 at $51 per acre. The overall average fluctuated between $37 and $38 per acre between 1923 and 1929.

Between 1929 and 1934 there was a further decline of $9 per acre over all provinces. Land that had been valued in British Columbia at $175 per acre in 1920 was valued at $60 in 1934. Land in old Ontario valued at $70 per acre just after the last war was valued at $41 in 1934, and in the Province of Quebec the drop was even greater being from $70 to $34—less than half. Similarly in the Prairie Provinces where land values had risen to $32 per acre in 1920 (in Manitoba $39) the estimated values were $17 in Manitoba and $16 in the other two Prairie Provinces.

AVERAGE LAND VALUES PER ACRE OF OCCUPIED FARM LANDS BY PROVINCES IN CANADA, 1910–1942(¹)

Province	1910	1914	1918	1920	1921	1923	1929	1934	1939	1942
	$	$	$	$	$	$	$	$	$	$
Prince Edward Island	31	39	44	49	46	51	43	34	35	37
Nova Scotia	25	28	36	43	35	31	36	27	33	33
New Brunswick	19	26	35	35	28	32	35	24	29	30
Quebec	43	47	57	70	59	56	55	34	44	55
Ontario	48	54	57	70	63	64	60	41	46	48
Manitoba	29	32	32	39	35	28	26	17	17	18
Saskatchewan	22	24	29	32	29	24	25	16	15	15
Alberta	24	21	28	32	28	24	28	16	16	17
British Columbia	74	150	149	175	122	100	90	60	60	62
Canada	33	37	41	48	40	37	37	23	25	26

(¹) Reported by Crop Correspondents, Dominion Bureau of Statistics.
For trends in prices of agricultural products, see page 2.

World War II.—Between 1934 and 1938 values in Canada were nominal at $24 per acre. In 1939 there was a slight increase to $25. The increases took place in Nova Scotia, New Brunswick, in central Canada and Alberta. There was no change in Saskatchewan or British Columbia. Land values in 1940 declined in all provinces except British Columbia, Alberta, Saskatchewan and Ontario where they were unchanged.

In 1941 there were slight increases in all provinces except Alberta and Saskatchewan. The average was $25 per acre. Similarly in 1942 there were increases in all provinces. The average was $26.

Observations and reports from various sections of the country would indicate that there developed a greater activity in land transfers in most provinces during the past year. One might anticipate a rather marked rise in the average values which will be reported shortly.

While it is true that prices of farm products have been kept on a more even level than was the case in the last war and some indication has been given that a degree of stability will be sought after the war. It is also true that farm incomes have risen. Payment of mortgage and other debts has been substantial. If surplus funds continue to increase, the problem of investment arises.

With the return of the men from Overseas, there may also be increased interest in farm land. The experience of those who purchased land at high prices in late years of World War I and immediately after should be clearly kept in mind. The asumption of debt at a high price level is bound to create a problem of payment.

There is, of course, the possibility that farm prices will be maintained or they might increase as a result of rising demand for food products. Nevertheless it would seem to be the wiser course to invest surplus funds in government bonds and await the development of post-war programs. If cash can be put on the line, a farm is a good place to invest it. This is particularly true where adjustments in size of the land unit are imperative. But in the past rising prices whether resulting from increased demand, inflation or economies in marketing have all too often been absorbed by investment in land. The time has come when farmers should consider investment of a part of any surplus funds in a higher level of living.

There would, of course, be one condition under which a full cash payment would not be warranted. For example,—suppose a farmer paid out all his cash for a farm. He would have no operating capital left. He could borrow from a bank, a credit union or an individual but he would probably have to pay six or seven per cent interest. In that case, it might be wiser to pay most of the price of the farm in cash but arrange for a mortgage at say five per cent interest, for an amount sufficient to cover operating expenses. It is a question of how the operating capital may be secured with the least expense. Credit wisely used in an asset but used unwisely, it may wreck a promising business. Under present conditions a larger part of the operating expense may be financed out of current income than in years of low prices.

Buying a Farm.—If you decide to buy a farm, the question is how are you to know what kind of a farm to buy. There are many factors to be considered but there are four unfailing tests. The first is soil. There is no way of overcoming the defects of infertile soil without incurring excessive costs. The second is crop yields which are related to soil, climate, topography and farm practices; consistently low yields mean low productivity. Third, there is location in relation to markets which will determine what sort of farming you may profitably engage in. These are the basis of the net income you can get out of that farm. The fourth test is what kind of neighbours you will have and what they seem to have been able to get out of their land. You may prove to be either a better or a worse farmer than the present operator. The neighbours tell the story of what you may be able to do.

Before you buy a farm, ask yourself where does the money come from? A farm must produce income. The sort of income you can get out of it determines what you can afford to pay for it. In reaching a decision take past performance as your guide. Buying a farm is a long time investment.

This takes us back to the idea that a farm is a business and a home. It emphasizes the permanency of farming. This is something that some have not been concerned about recently and others unable to attain. It will be always impossible for some because they will lag behind in the pursuit of a good living.

In an ordered economy agriculture should enjoy a degree of permanency consistent with the idea of a dynamic world. In the last twenty years agriculture in Canada has undergone many changes. Still others appear to be in store. It is necessary that the majority of farmers be able to farm efficiently and to adjust farm practices and management to changing conditions so that agriculture will contribute a full share to the national income and national life. Inflated and deflated land values will prevent farmers from entering into this happy hunting ground.

AGRICULTURAL OBJECTIVES FOR 1944

Early in December a conference was held in Ottawa to work out details of the 1944 agricultural program. Present at the invitation of the Agricultural Supplies Board, under whose auspices the meetings were held, were delegates representing Provincial Departments of Agriculture, producer organizations and various other official bodies, including Dominion Government Departments. Prior to the opening of the 3-day sessions, preliminary reports covering each commodity had been prepared by representative sub-committees at Ottawa, and forwarded for advance perusal by delegates.

In his opening remarks at the Conference, Honourable James G. Gardiner stated that while peak food production tonnage may have been attained in 1943, it was to be hoped that the line could at least be held not only in 1944, but for the duration of the war and the relief period to follow.

The Conference sessions were highlighted by discussions on wheat, hogs and the feed situation. Following is a brief digest of the objectives agreed upon for the various commodities.

Grain and Forage Crops.—In view of the large world wheat surplus, the majority sentiment at the Conference was against any wheat acreage expansion at the present time. As a result the 1944 goal for wheat was set at 17·5 million acres, or unchanged from last year's level. In view of continuing emphasis on live stock production, it was deemed essential to maintain output of coarse grains and forage crops, as indicated by the following objectives: oats—16·4 million acres (6 per cent increase); barley—8·5 million acres (1 per cent increase); mixed grain—1·8 million acres (20 per cent increase); husking corn 400,000 acres (53 per cent increase); hay and clover—9·8 million acres (unchanged); alfalfa—1·5 million acres (unchanged). The objective for rye, not essentially a feed grain, is 500,000 acres (13 per cent decrease).

Meat Animals.—In his opening address, Agriculture Minister Gardiner referred to the continuing demand for meats. On the second day of the Conference, delegates heard an address by Colonel John Lewellin, British Minister of Food, who made a strong appeal for the continuation of substantial bacon shipments in 1944. As a result, the objectives decided upon for the various classes of meat animals, all call for an output at least equal to 1943. For hogs commercial marketings equal to 1943 (7 million) are suggested; for cattle an increase to 1·2 million (6 per cent) is anticipated, with a 3 per cent increase for calves and a 5 per cent increase for sheep and lambs.

Dairy Products.—The objective for total milk production calls for 17·4 billion pounds or about the same as 1943. Estimates of anticipated production provided at the Conference would indicate a small decrease in butter production, a little greater decline in cheese production, and no change in the output of concentrated milk products, in 1944.

Eggs and Poultry.—With another large export contract being arranged for dried eggs, another step-up in egg production is suggested for 1944, and an objective of 10 per cent more eggs is desired. An increase of 11 per cent in dressed chicken meats has also been suggested.

Fruits and Vegetables.—An increase of 5 per cent has been designated as the goal for potato acreage in 1944. Most fruit crops were below average in 1943, and increases are desirable for 1944. For both green and leafy vegetables, a substantial increase in production was held as a desirable goal for next year, as fresh and canning vegetables are needed in increased quantities.

Other crops.—Increased production of oilseed crops is asked for in 1944, and with the exception of flaxseed, it appeared in December that objectives might be secured. Field beans and peas, forage crop seeds, fibre flax and the various types of tobacco are other crops for which fairly ambitious objectives are specified, and in most cases indications point to increased plantings. For sugar beets the main acreage increase appears in prospect in Quebec, where a new factory is being established. Larger output of maple syrup and honey have also been suggested for next season.

To assist farmers in meeting the high level of output recommended in 1944, certain assurances have been given. In some cases, additional premiums, subsidies, or other price stimuli have either been provided or promised. Increased quotas of machinery and equipment are also in prospect. With respect to farm labour, the Conference heard assurances from A. MacNamara, Director of National Selective Service, that every effort would be made to see that labour shortage would not become a serious limiting factor. Adequate supplies of fertilizers and other essential supplies have been promised. Granted a favourable season, it seems reasonably assured that Canadian farmers in 1944 will meet the majority of the objectives proposed, and thus produce at least as great an output of food as in 1943.

ANOTHER YEAR OF BACON HISTORY[1]

H. K. Leckie

The week ending December 25, 1943, saw the close of another epoch-making chapter in the history of the Canadian hog and bacon industry. At this point, 58 weeks after purchases commenced on the fourth bacon agreement, the last of the contract quantity of 675 million pounds entered curing cellars or freezers, earmarked for eventual delivery overseas. This runs the total of bacon delivered by Canada to the United Kingdom during the four wartime agreements to date to over two billion pounds. The produce this quantity of bacon required approximately 17 million hog carcasses, or about the same number of hogs slaughtered in all inspected plants in Canada from 1935 to 1939, inclusive.

During the final weeks of the 1942-43 agreement, hog marketings in Canada were at the highest levels ever recorded, and weekly export purchases at times exceeded 20 million pounds or twice the amount of bacon shipped to Britain in the entire calendar year 1931. The last quarter of 1943 saw new records established for hog marketings during a single quarter, a month, a week, and, almost certainly, one day, although precise records for the latter are not available.

Operations are now getting under way on a new and longer-term bacon agreement, commencing January 1, 1944. Although minimum commitments during this period have been somewhat reduced from the very heavy scale of deliveries maintained throughout 1942-43, nevertheless it has already been indicated by the British Ministry of Food that shipments somewhat greater than the minimum are desirable, to ensure maintenance of the British bacon ration. Canada has given assurances that every effort will be made to meet such requirements.

Before proceeding to discuss future hog and bacon prospects, it might be of interest to briefly summarize bacon export operations during the term of the fourth agreement.

Commencement of Operations.—Purchases of bacon to be delivered under the 1942-43 contract commenced the week ended November 21, 1942. Although the term of earlier agreements corresponded more nearly to the October-September hog marketing year, the delay experienced in filling the third agreement for 600 million pounds brought the starting point closer to the end of the calendar year, and at the conclusion of the fourth agreement, contract and calendar years finally became concurrent. However, this has certain disadvantages as far as practical operations are concerned from the standpoint of accumulating storage stocks needed to level out deliveries.

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[1] For previous articles in the Economic Annalist on Bacon Board operations see: Vol. XIII, No. 2, May, 1943, page 28; Vol. XII, No. 5, October, 1942, page 68; Vol. XI, No. 5, October, 1941, page 75; Vol. XI, No. 1, February 1941, page 13; Vol. X, No. 5, October, 1940, page 67.

By the close of 1942, total purchases of bacon on the fourth agreement totalled approximately 92 million pounds of which nearly 14 million pounds represented storage stocks of fresh product with the remaining 78 million pounds cured or in-cure and awaiting shipment. Deliveries at seaboard to the Ministry of Food commenced during Christmas week, 1942.

Delivery Schedule.—To complete the 675 million lb. contract in 52 weeks, required average weekly deliveries of approximately 13 million pounds. Since the supply of bacon should move forward to the United Kingdom in as uniform a flow as possible, it has been necessary for the Bacon Board each year to draw up a shipping and storage schedule, making the necessary allowances for seasonal fluctuation in hog marketing. This of course necessitates an estimation of the probable trend of hog production.

With respect to the 1942-43 agreement, the problem of maintaining the weekly average of 13 million pounds throughout the summer months, in view of the anticipated level of hog slaughterings during this period, was particularly formidable, and as a result arrangements were made with the Ministry for a seasonal adjustment in deliveries to avoid the necessity for attempting to build up very large storage stocks in the spring of 1943. Under this program it was planned to allow shipments to drop to about 10 million pounds during the third quarter of 1943 and make up the lost ground by increased deliveries during the final quarter when a heavy seasonal increase in marketings was in prospect. This arrangement worked out quite satisfactorily although weekly purchases were somewhat lower than expected during midsummer, and somewhat heavier than anticipated during the fall.

Storage Program.—During periods of heaviest hog deliveries, the Board follows the practice of directing packers to put sufficient fresh Wiltshire sides and cuts into curing tanks each week to maintain the desired rate of current shipments and to store the balance of product available for export. Later on, when slaughterings decline seasonally below the level necessary to maintain current shipments, storage stocks are defrosted and cured as required to supplement current put-downs.

During the 1942-43 agreement, the heaviest into-storage movement occurred during the first nine weeks of operations, or from mid-November to mid-January. The peak stock position was reached the first week in February with a total of 21·7 million pounds of fresh export product in storage. A comparatively heavy out-of-storage movement became necessary for five weeks commencing February 15th, and by March 20th storage stocks had been reduced to 7·8 million pounds. During May considerable into-storage movement took place, and stocks reached 10 million pounds by the end of the month. From that point onward, however, it became necessary to make increasingly heavy withdrawals, and during July reserves were virtually exhausted. As indicated previously, the arrangement whereby bacon deliveries to the Ministry of Food were adjusted seasonally, cut down considerably on peak storage requirements, although actually stocks were exhausted a few weeks earlier than planned.

In addition to regular cured bacon, arrangements were made during the fourth agreement to ship approximately 16·8 million pounds of fresh frozen Wiltshire sides as part of the contract quantity. This product was secured half in the spring and half in the fall of 1943, and was frozen, stored and shipped as convenient.

Prices.—The price paid by the United Kingdom for Grade A Wiltshires at Canadian seaboard was $21.75 per 100 pounds throughout the 1942-43 agreement. Grade B Wiltshires at $21.15 brought 60 cents per 100 pounds less with various types of cuts in proportion. On the basis of these prices, the Board arranged a graduated schedule to packers, based upon grade, weight and selection. The best quality Wiltshires (Grade A, No. 1, sizeable) brought $21.95

per 100 pounds with other prices ranging downward to as low as $17.25 for the heaviest and fattest Grade B Wiltshires. Up to June, 1943, the heaviest weights of Wiltshire sides permitted to be shipped ran up to 80 pounds but effective June 14th a price schedule was arranged for Wiltshires from 80 to 85 pounds in weight. Sides in this weight range and of A grade and No. 1 selection brought $2.50 per 100 pounds less than the corresponding grade and selection in the sizeable (55-65 pounds) weight range.

On November 15, 1943, bacon prices to packers were increased by 75 cents per 100 pounds bringing the price for Grade A No. 1 Sizeable to $22.50. This arrangement permitted packers to increase hog prices by approximately 50 cents per 100 pounds, or the level expected to become effective under the 1944-45 agreement, although at the time a considerable quantity of bacon remained to be purchased under the contract. However, by virtue of certain savings effected on 1942-43 operations, the Board found itself in a position to increase prices several weeks earlier than would have occurred under normal circumstances and during a period marked by the heaviest deliveries of hogs and bacon on record.

Reconstitution of the Board.—On June 3, 1943 Agriculture Minister Gardiner announced an important change with respect to the Bacon Board, which had been established by Order in Council (P.C. 4076) on December 13, 1939, and had supervised bacon export operations since January 20, 1940. Under a new Order in Council (P.C. 4187) the Bacon Board was reconstituted as the Meat Board. The change did not affect personnel, but under the new arrangement certain additional responsibilities with respect to export of other meats, such as beef, were delegated to the Meat Board, which would assume these functions on behalf of the Agricultural Food Board. By virtue of the fact that no change of personnel was involved, and all orders and requirements of the Bacon Board remained in effect unless superseded by subsequent action of the Meat Board, the transition to the new status was accomplished smoothly, and with no disruption of normal operations.

Meat Board Activities.—The chief responsibility of the Meat Board, as with the Bacon Board, has continued to be the supervision of the delivery of bacon and other pork products to the United Kingdom. The last meeting of the Bacon Board as such was held on June 4, 1943, while the first official meeting under the designation "Meat Board" took place on July 5, 1943. During its span of existence the Bacon Board held 154 regular meetings.

The Order in Council (P.C. 4187) which merged the Bacon Board into the Meat Board, provided that all licences, orders or requirements issued by the Bacon Board should remain in full effect until they lapsed or were suspended or cancelled by the Meat Board. One of the first tasks undertaken after the Board's reconstitution was to revoke Bacon Board Orders Nos. 1, 2, 3, 4 and 5 dealing with hog slaughtering quotas and distribution of pork products in the domestic market. These were then revised and consolidated into Meat Board Order No. 1, which became effective July 12, 1943.

One of the specific purposes of the increased functions granted the Board under P.C. 4187, was to enable it to implement the arrangements necessary for the support of cattle prices by accumulating stocks of surplus beef for export to the United Kingdom. On September 22, 1943, the Meat Board issued specifications (M.B.R. 86) for the weights and qualities of carcass beef eligible for delivery to the Board's account for domestic stockpiling or export. At the same time Meat Board Order No. 2 was announced, effective September 27, and providing that from this date onward authorization from the Board would be necessary before beef meeting export specifications could be frozen for storage. The price schedule for beef was also released, which, in the period from September 20-December 18, 1943, was designed to establish a floor price for carcass beef two and one-quarter cents below the WPTB ceilings. Provision was made for subsequent half-cent increases in the floor on December 20, February 7, March 20 and April 24.

At the time of the first announcement of the new bacon agreement on October 22, 1943, by the Dominion Minister of Agriculture, it was indicated that certain Meat Board restrictions on the domestic slaughtering of hogs and the sale of pork products were to be cancelled. This was subsequently accomplished by Meat Board Order No. 3, which became effective October 25 and provided for the cancellation of Meat Board No. 1.

On November 15, 1943, with a balance of approximately 100 million pounds remaining to be purchased under the fourth agreement, the Meat Board announced an increase in export bacon prices of 75 cents per 100 pounds thus bringing prices in line with the expected levels under the new contract announced the previous month. In this way reserve funds accumulated from 1942-43 contract operations were passed back to producers in the form of higher hog prices during closing weeks of the agreement, during which time record breaking hog deliveries occurred.

Future Prospects.—As already indicated, announcement was made last October respecting the important features of the new bacon contract. Briefly these were: (1) A longer term—two years in place of one. (2) Some reduction in the minimum quantity guaranteed—900 million pounds in two calendar years. (3) A price increase of 75 cents per 100 pounds or $22.50 instead of $21.75 for Grade A Wiltshires at Canadian seaboard.

On January 12, 1944, Agriculture Minister Gardiner had further important announcements to make which were of considerable interest to the Canadian swine industry. In the first place, premiums on top quality hogs are to be instituted by the Dominion Government. Secondly, negotiations are being reopened with the United Kingdom for a further extension of the term of the contract, with the suggestion that a four-year period might be mutually acceptable. Thirdly, changes are to be instituted in the methods of selling hogs with the present system of packers' premiums and discounts being discontinued. In future price differentials between various classes of hogs will be established by competition and market demand, with the Dominion Government assuming responsibility for the payment of additional premiums to encourage the production of top quality hogs. It is planned to pay a premium of $3 for each Grade A carcass and $2 for each B 1 carcass, payment to be made direct to producers from the Dominion Treasury and to be continued until 6 months after the end of the war. To qualify for these quality premiums, hogs must be slaughtered in plants presently under Dominion Government inspection, or those which subsequently become eligible.

It has also been indicated that an organization will be called together similar to the Joint Swine Committee which was responsible for much of the pioneer and development work in improving the hog marketing system, but which was dissolved prior to the war when many of the organizations originally represented on it disappeared. Proposed changes in the hog grading and pricing system will be discussed at a meeting to be held in Ottawa at an early date which representatives of producers, processors and marketing organizations will be asked to attend.

At the time of writing, it is too early to appraise the full effects of these most recent developments on future hog and bacon prospects. It seems fairly clear, however, that the program as now outlined will encourage the production of more top quality hogs and assist in directing them through regular commercial channels thereby facilitating the delivery of more export bacon. In addition, the knowledge that an agreement for a longer term is now under consideration, will introduce a further note of stability into the picture. The net result should be that hog producers will be encouraged to plan for substantial pig crops in the spring and fall of 1944, with the assurance of a continuing overseas market for bacon for some time to come. It will of course be essential, at the same time, to maintain production of feed grains to ensure the continuance of a favourable over-all feed position. Both of these objectives are being placed before Canadian farmers as vital features of the 1944 agricultural program.

THE FARM LEASE [1]

C. C. Spence

This is the time of the year for drawing up a new farm lease or for renewing the old one. Farm leases are more common to-day than they were a few years ago. There are more farms operated by renters. Should you be either the tenant or landlord of a rented farm possibly something I shall say will be helpful. I hope that you have a pencil and paper and will jot down a few of the more important points that I will make in the talk.

In these Prairie Provinces the crop-share lease is by far the most common form of rental agreement. Of the crop-share lease the most common is the one-third-two-third share. The landlord gets one-third of the crop, usually in grain, delivered at the elevator, and the tenant gets the rest. The landlord pays the taxes, fire insurance and repairs to the buildings and fences. The tenant provides, the power, equipment and labour, and takes care of all other current operating expenses.

In some regions where crops are more risky and long-time average yields relatively low, agreements are made for the landlord to get one-quarter and the tenant three-quarters, with each partly carrying the same expenses as with the one-third-two-thirds, arrangement.

Less common than the "one-third-two-third" crop share agreement is the half-and-half. Each party receives one-half of the crop. In addition to the expenses associated with real estate, taxes, insurance and repairs—the landlord provides all the seed and pays one-half the twine, one-half the threshing bill, or one-half the combining cost. The tenant provides the power equipment and takes care of other current operating expenses. It is obvious in this arrangement that there is less risk for the tenant.

Another half-and-half crop share lease agreement is made where the landlord in addition to the real estate owns the power and equipment. In this situation the tenant would be expected to carry all the current operating expenses, except that on real estate, and in addition possibly only the equivalent of one-half the seed. If the landlord owns only the equipment, and the tenant the power, a somewhat larger share than the half should go to the tenant—say three-fifths. In this case the landlord would get two-fifths of the crop, but the tenant might be expected to pay the taxes.

Common to many crop-share leases is an understanding that the tenant be given the use of the unimproved land for pasturing his horses and productive live stock. Often he is permitted to cut any wild hay for his own use. Sometimes, he agrees to pay a small cash rental for the use of the pasture, and in some leasing arrangements the landlord gets a share of the wild hay.

Since there are no two farms alike, it should not be expected that two lease agreements should be alike. One of the essentials of a good lease is that it should be fair to both parties. A lease is equitable when the landlord and the tenant share in the income in the same proportion that each shares in the expenses.

With the relatively higher returns from live stock compared with grain during the past few years, more interest is being taken in the live stock enterprise on the farm. Both the landlord and the tenant may find it to their advantage to share in this enterprise. It would be expected that the initial capital would be provided by the landlord. Within the framework of the crop-share lease provision could be made for the tenant feeding and carrying the landlord's live stock.

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[1] A radio talk broadcast from C.K.A.U. Edmonton, in the Farm and Home Series program.

For the care and feeding of cattle an equitable arrangement would be for the tenant to receive a three-fourths share of the sales from the increase and a provision set out in the agreement that at the end of the lease the landlord receive the equivalent in number and ages of the original herd, and the rest divided one-fourth to the landlord and three-fourths to the tenant. For the care and feeding of hogs an equitable arrangement would be for the landlord to provide and retain ownership of the sows, expense of their breeding and receive from each litter the equivalent of one 200-pound bacon pig at market price.

As noted, special provision for participating in these extra farm activities could be made in a regular crop share lease.

Instances occur where the landlord takes a more active interest in the farm business than of the situations which have been described.

Where the power, equipment, and the live stock are owned jointly half-and-half by landlord and tenant the gross receipts from all sources both crops and live stock are divided half-and-half. The landlord pays the taxes, insurances and upkeep of buildings and fences; the tenant pays for all labour. All the other current operating expenses are shared half-and-half including, if any, the purchased seed and feed. In practise the seed and feed are set aside before the crop to sell is divided.

Where the power, equipment and productive live stock, as well, are owned by the landlord, an equitable arrangement may be worked out along these lines: the gross receipts from all sources both crops and live stock be divided half-and-half between landlord and tenant; all current operating expenses except those for taxes, insurance and building repairs, be taken care of by the tenant.

It is obvious that live stock-crop leases should run for a period of three years or more. Such contracts should carry provision for adequate notice of termination in case continued disagreement should occur.

A live stock-crop lease is not likely to be satisfactory unless the landlord is familiar with farming in the community, and resides close enough to take a continued interest in the business, and both parties are prepared to give and take.

With absentee landlords, a cash lease is probably the most satisfactory type of arrangement, particularly if the farm business is of a mixed-grain-live stock type.

The normal relationship of a father to his son suggests certain conditions in an agreement for operating a farm, in addition to those which have been discussed.

Where the father continues to exercise control of management and also works on the farm, the simplest plan is for the father to pay the son an agreed cash wage, or a clear share of the receipts. When the son has accumulated sufficient capital to buy the father's outfit of power and equipment it may be desirable for the son to take over the management. One of the common share-lease agreements could be made to cover the situation.

If it is desirable that the son take over a more active management of the farm before acquiring sufficient capital to buy the father's equipment, possibly an arrangement could be made where by the son nominally acquires half interest in it. This might apply also to the productive live stock, feed and seed. He could give a note which would be paid off out of his net share of the farm receipts over a stated period. A half-and-half contribution and sharing agreement would seem satisfactory. The son or tenant would provide all labour and the father or landlord would take care of taxes, insurance and upkeep of buildings and fences. The other current expenses would be divided evenly.

There are several points concerning farm leases which I would like to discuss with you if time permitted. The Economics Division of the Dominion Department of Agriculture has been co-operating on a study of Farm Tenure with the University of Saskatchewan, in which hundreds of leases on rented farms located in several representative parts of that province, have been examined. We are passing on a few of our observations in what I have said.

In areas where light crops are more frequent than rare, there should be written into the contract a reduced share to the landlord when yields fall below a certain minimum. Possibly this minimum should not be below the current year's taxes unless there is also written into the contract a provision whereby above a certain maximum yield the landlord should receive some additional revenue from the gross yield.

Before the advent of the P.F.A.A. and W.A.R. benefit payment scheme, there was quite a large proportion of rental agreements functioning without a formal written document.

A written lease is desirable since its preparation requires a discussion of the terms of the lease by both the landlord and the tenant. When it is used both are likely to have a clear understanding of their rights and obligations. A written lease also serves as a memorandum of understanding in case of the death of one of the contracting parties. Any of the common printed forms are reasonably satisfactory if liberal use is made of the blank lines and care is taken to cross out any printed provisions not suited to the particular deal. But no document, no matter how carefully conceived and executed will guarantee agreement between the contracting parties. Even a legal lease will not bring about a satisfactory relationship between the landlord and the tenant without a willingness on the part of both to "get along".

COSTS OF CLEARING AND BREAKING BUSH LANDS IN ALBERTA

At the present time much thought is being given to the matter of costs of improving bush lands. In the past, because of the scarcity of cash on the part of the settler, most of the clearing of land has been done by hand methods—a slow laborious task. At present, due to higher farm revenues, the trend is toward hiring power machinery to do this work. The concensus of opinion is that in the future land improvement will be done by mechanized equipment and not by the slow method of axe and grub hoe.

In Alberta, data concerning the cost of clearing and breaking land by power equipment has been unavailable in the past. Figures on land improvement by the hand method have been calculated, but these costs were ascertained during a period of low prices (depression) and are hardly applicable to-day. It has been possible, however, during the past year to gather some actual and interesting figures on the subject because more power equipment is being hired to improve land.

The type of power most commonly used by "big outfits" is Diesel Caterpillars of sixty horse-power. For clearing of land a V-shaped steel cutting blade, somewhat similar to a snow plough is attached to the front of the tractor, with a metal framework overhanging the unit to protect the driver from falling trees. This cutting blade sheers the trees off at ground level.

For gathering and piling the brush a breastwork is attached to the tractor with prongs jutting out at right angles, which pick up and carry the slash to piles for burning. This step in land improvement is not always done by power, as some settlers prefer to gather the fallen trees for wood.

Breaking is done in the usual manner, with the heavy power breaking and turning up the roots as well. For clearing and piling, these units work on an hourly basis of $8 per hour. (Some outfits charge $7.50 per hour). The charge for breaking is commonly $5 per acre, although war conditions have caused a temporary increase in this price.

The following table sets out the average estimated cost of improving land by the use of power equipment by different types of cover.

ESTIMATED COST OF IMPROVEMENT OF BUSH LANDS IN ALBERTA

	Clearing	Piling	Breaking	Total
	$ cts.	$ cts.	$ cts.	$ cts.
Light cover (small trees and scrub reasonably dense..	2 50	1 50	5 00	9 00
Medium cover (trees to eight inches in diameter and scrub medium dense; or medium trees and scrub reasonably dense)................................	4 00	3 00	5 00	12 00
Heavy cover (trees to eight inches in diameter and scrub medium dense; or medium trees and scrub very dense)..	8 00	4 00	5 00	17 00

(Cover referred to does not include anything as heavy as a timber classification.)

By employing the unit as an hourly rental for clearing and piling, the cost will range between the limits mentioned. This arrangements allows for the variation in density and size of bush cover.

Twelve dollars per acre is often quoted as the cost of improvement of bush land. This figure is derived by the above-mentioned method for medium cover, medium cover being considered as the average of all types of cover.

BOOK REVIEW

FOOD ENOUGH, John D. Black, Jaques Cattell Press, Lancaster, Pennsylvania, 268 pages, $2.50, 1943.

"Food Enough" is dedicated to—

> "A company of working economists in the War Food Administration, in the Office of Foreign Agricultural Relations, in the Office of Price Administration and especially in the Bureau of Agricultural Economics, without whose untiring services to the Nation it never could have been written. They make the reckonings and plot the course from month to month of every flow and current in the restless stream of agriculture. Without their charts, the Administrators would be no more able to navigate than a mariner with a compass but no readings of latitude and longitude. Without their readings and their projections, no one who talks and writes about agriculture could safely venture much beyond the first meridian."

There are twenty-one chapters in this book. The first is devoted to the problems of food in general. The producers of food and distribution of food in the United States have been assigned the task of producing and distributing "every possible pound of human food." The central theme of the book is that,

> "No physical reasons exist why food enough cannot be produced, processed and moved into consumption to feed our armed forces, our war workers and our families and at the same time do our share in feeding our allies and the people of the freed nations."

The author believes that if the United States fails to reach this goal, the reasons will be human, not physical. "They will be that we did not order and organize our production, processing and consumption so as to produce, process, distribute and eat the right food."

Dr. Black suggests that the great need for food will continue after the war. That we must not let the conditions which obtained after the last war recur. He emphasizes the fact that United States cannot carry the burden in the post war period alone. Expansion of food production possible in the United States during the next two to three years would be insufficient to meet even scanty requirements. "Food to win the war will merge gradually into food for relief and this in turn into food to make and keep the peace."

United States agriculture could be reorganized so as to feed twice their population "at a higher level of health and working efficiency than it has ever attained." It will take time to do this. We must set our minds to this problem and use all means to attain it. The actual food program must be organized on facts—considered well and carefully planned. It will involve co-operation of all groups.

The succeeding chapters deal with food for our armed forces, food for war workers, food for civilians, food for our allies and friendly nations, enemy food supplies, man power and food production, machines and food production, materials and food production, the foods we need, the foods we could produce, the food we can afford, shifts in consumption, shifts in production, food prices, food rationing, food from producer to consumer, food relief and rehabilitation, freedom from hunger, food international, food after the war.

The chapters on "Enemy Food Supplies," "Manpower and Production," "Machines and Production" are especially worth while since they tend to sober the claims of partisan groups. The chapter on "The Food We Need" will help to bring home to the public the deficiencies in our diets and our responsibilities to the under-nourished. Dr. Black summarizes his analysis of Food Production as follows (p. 141):

> "If labour is short as at present, we should (1) get our calories so far as possible from cereals, beans, peas, potatoes, and sugar beets; (2) get our fats and oils from vegetable oils; (3) get our proteins in large part from cereals, beans and peas, soybeans and dairy products; (4) convert all available grass and forage into dairy products first, and beef and mutton second; (5) use whole milk whenever possible either as fluid milk or as butter plus milk powder, etc.; (6) use any land not needed for producing direct human food crops by growing feed grains, first to supplement the grass and forage, and second to feed hogs and poultry; (7) supplement the vitamins and minerals that will be provided by the foregoing by maintaining existing orchards, especially the citrus prune, peach and apricot orchards; and by growing such acreages as are needed of the more productive of the vegetables such as carrots, tomatoes, cabbage, kale, onions, beets and snap beans; (8) use any left over or part-time labour in such poultry production and vegetable and fruit growing as can be fitted in with the foregoing."

These points need to be considered in conservation with the adjustments in consumption considered on pages 148-152.

In Chapter 19, the author discusses changes in distribution. He suggests that the problems of distribution may be even more difficult than those of production because food has been diverted from ordinary channels of distribution. Changes in population have resulted from war industry. Difficulties of directing distribution are discussed.

On the matter of "Food Relief and Rehabilitation," two suggestions are put forward in regard to financing. Any food for relief and rehabilitation should be furnished either as a commercial loan or cash. Up to this point, expenses will be charged to the cost of war and most, if not all, lend lease accounts should be cancelled. The second proposal is that funds be made available as loans to individual farmers to get their "production going again."

In discussion "Freedom from Hunger" Dr. Black states, "Let us not then take too lightly this assignment of obtaining an adequate diet for all nations in the shortest possible time. The balance between foods, diets and birth rates has to be changed too; and in the past this balance has changed slowly. There are ways and means to hasten this however and we can learn how to use them."

OTTAWA: Printed by EDMOND CLOUTIER, Printer to the King's Most Excellent Majesty, 1944.

The ECONOMIC ANNALIST

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Minister of Agriculture | May, 1944

THE ECONOMIC SITUATION

Wholesale prices in Canada have moved up a shade. Actually the index for February was 102·7 compared with 102·5 in January. Preliminary examination indicates a similar advance in March. The cost of living index hovers about 119·0. A fractional decline occurred at February 1 but the index was again 119·0 at March 1.

Wholesale prices of Canadian farm products eased off during the first two months of this year. The total index was 104·0 in January and 104·3 in February compared with 104·6 in December. The field products index has continued to rise. It was 91·7 in December, 92·1 in January and 92·5 in February. The index of animal products, however, registered a decline in January which was only partially recovered in February, when the index was 124·1—two points below the December index. It should be noted that the index of wholesale prices in general is based upon market quotations. However the index of Canadian farm products includes the bonuses and subsidy payments paid directly to farmers. In February increased prices for potatoes, onions and hay carried the field products index upward. Similarly, higher prices for hogs and milk at Vancouver were responsible for the partial recovery in the animal products index. Changes in the bonus payments for hogs undoubtedly influenced the animal products index in February.

Physical Volume of Business.—The physical volume of business was slightly lower in February although the index of industrial production continued to rise. Compared with the first two months of 1943, the physical volume of business was 7·8 per cent higher in January and February of this year. Construction contracts awarded showed a decline of 19·3 per cent but building permits were higher. Employment apparently reached a peak in December but it is still above the level reached in the comparable period of last year.

Retail Sales.—Dollar values of retail sales indicate continued activity in retail trade. In February the index of retail sales was 5 per cent higher than in January and 6 per cent higher than in February of 1944. In comparison with February, 1943, there were some marked changes. Sales of specialty shoe shops were 20 per cent lower. Sales of women's specialty shops were two per cent lower. Sales of radio and electrical appliance stores were 4 per cent less than in February, 1943.

Sales of restaurants were 19 per cent higher. Hardware stores experienced a 16 per cent increase and candy shops did 7 per cent more business in February of this year than was the case a year earlier. Furniture store sales were 8 per cent greater than in February of last year.

Cost of Living.—Urban costs of living have changed very little up to April first. The index was 119·0 at the beginning of January, 118·9 at the beginning of February and 119·0 at the beginning of March. The food index was 130·9 for February and 131·1 on March 1. Increased retail prices for lemons, oranges, eggs and cheese were responsible for the slight rise in the index.

Wheat.—Moisture conditions in Western Canada currently are not favourable. Seeding was started during the first week in April in Southern Alberta but elsewhere there were no reports of seeding. The exports of wheat during the

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UNIVERSITY OF TORONTO

ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Living Costs and Production Indexes Computed by Dominion Bureau of Statistics: Index of Industrial Wage Rates Published by Department of Labour

Year	Wholesale Prices 1926=100				Retail Prices		Production and Wages 1935–39 =100		
	All commodities (1)	Farm products (2)	Field products (3)	Animal products (4)	Urban Living Costs 1935-1939 =100 (5)	Farm Living Costs 1935-1939 =100 (6)	Physical volume of business (7)	Industrial production (7)	Industrial wages rates (8)
1913...	64·0	64·1	56·4	77·0	79·7	79·6	....	....	54·9
1914....	65·5	70·2	65·4	78·3	80·0	82·0	....	....	55·6
1915....	70·4	77·9	76·9	79·5	81·6	86·3	....	....	56·0
1916..	84·3	89·8	88·8	91·4	88·3	93·6	....	....	59·9
1917....	114·3	128·5	134·5	118·4	104·5	111·6	....	....	68·7
1918....	127·4	132·6	132·0	133·6	118·3	131·4	....	....	80·7
1919....	134·0	146·7	142·6	153·5	130·0	143·0	62·3	56·0	94·8
1920....	155·9	160·6	166·5	150·8	150·5	170·7	65·9	59·7	112·7
1921.. .	110·0	103·7	100·3	109·5	132·5	139·5	58·1	51·6	102·7
1922 ..	97·3	88·0	81·4	99·0	121·3	127·5	69·1	65·7	95·9
1923....	98·0	81·5	73·3	95·1	121·7	127·9	74·7	71·6	98·6
1924....	99·4	88·1	82·7	97·2	119·5	125·1	73·9	70·4	99·8
1925....	102·6	101·0	98·2	105·6	120·6	123·6	79·4	76·7	98·8
1926...	100·0	100·0	100·0	100·0	121·8	120·9	87·3	85·5	99·4
1927....	97·7	102·1	99·9	105·7	119·9	119·5	92·7	90·3	101·5
1928....	96·4	100·7	92·6	114·3	120·5	118·3	102·4	100·7	102·7
1929....	95·6	100·8	93·8	112·5	121·7	117·4	109·6	108·9	104·5
1930....	86·6	82·3	70·0	102·9	120·8	113·7	95·6	92·3	105·2
1931....	72·1	56·3	43·6	77·6	109·1	103·7	81·7	77·3	101·7
1932....	66·7	48·4	41·1	60·7	99·0	97·7	68·7	63·2	94·5
1933....	67·1	51·0	54·8	59·7	94·4	95·7	69·6	65·6	89·6
1934....	71·6	59·0	53·8	67·7	95·7	97·8	82·2	80·0	90·5
1935....	72·1	63·5	57·3	74·0	96·2	97·9	89·4	88·5	93·1
1936...	74·6	69·4	65·8	75·3	98·1	98·3	98·0	97·8	94·8
1937....	84·6	87·1	88·3	85·0	101·2	102·8	107·2	108·4	101·8
1938....	78·6	73·6	69·0	81·3	102·2	101·9	98·6	98·0	104·9
1939....	75·4	64·3	54·2	81·2	101·5	99·4	106·9	107·4	105·3
1940....	82·9	67·1	55·9	85·2	105·6	108·6	124·3	132·4	108·4
1941....	89·9	71·2	56·5	95·8	111·8	114·2	165·0	177·5	119·2
1942....	95·6	82·5	66·5	109·2	116·8	119·2	202·2	228·0	127·5
1943....	99·9	95·9	81·6	119·9	118·4	121·5	235·9	273·0	....
1943									
Jan.....	97·1	87·7	70·6	116·2	117·1	....	225·8	254·6	....
Feb....	97·5	88·5	71·6	116·8	116·9	....	227·3	267·8	....
Mar...	98·5	91·2	75·4	117·6	117·2	....	231·7	269·1	....
April ..	98·9	92·3	76·8	118·2	117·6	121·1	236·9	274·4	....
May ...	99·2	92·8	77·4	118·7	118·1	....	231·8	267·8	....
June....	99·5	94·4	79·4	119·4	118·5	....	232·4	267·2	....
July....	100·1	96·4	82·6	119·4	118·8	....	236·3	270·2	....
Aug....	100·4	97·5	84·9	118·6	119·2	121·9	241·0	276·8	....
Sept...	101·2	97·9	86·1	117·6	119·4	....	236·7	280·9	....
Oct.....	101·9	103·6	90·8	125·0	119·5	....	239·5	283·3	....
Nov....	102·4	104·2	91·3	125·7	119·4	....	242·9	282·5	....
Dec....	102·5	104·6	91·7	126·1	119·3	....	248·8	282·0	....
1944									
Jan.....	102·5	104·0	92·1	123·8	119·0	....	247·0	275·4	....
Feb....	102·7	104·3	92·5	124·1	118·9	....	241·6	279·5	....
Mar....	103·0	104·3	92·7	123·7	119·0	....	247·8	282·7	....

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1. See Prices and Price Indexes 1913-1928, pp. 19-21, 270-289 and 1913-1939, p. 17.
2. Wholesale prices of Canadian products of farm origin only. See Prices and Price Indexes 1913-1937 p. 52, and Monthly Mimeographs 1943-44.
3. Wholesale prices of grain, fruits and vegetables.
4. Wholesale prices of animals and animal products.
5. See An Official Cost of Living Index for Canada, 1940.
6. Index numbers of Farm Family Living Costs 1913-38 and Farm Living Expenditures 1934 and Farm Family Living Costs Mimeograph.
7. Monthly Review of Business Statistics, p. 8, and Monthly Indexes of the Physical Volume of Business in Canada, supplement to the Monthly Review of Business Statistics November, 1932. Yearly index numbers for 1943, subject to revision.
8. Department of Labour, *Labour Gazette*, December 1943.

first half of the crop year were approximately 150 million bushels. Shipments for live stock feeding in United States have been substantial. The carry-over on July 31 is now expected to be 200 million bushels less than at the end of July, 1943, and will be approximately 375 million bushels.

Dairy Production.—In the first three months of this year creamery butter production was 35,785,551 lb. compared with 40,628,329 in the first quarter of 1943. Only in Saskatchewan was there an increase recorded and this was 6·5 per cent. Production in Quebec was 40·5 per cent lower than a year ago and in Ontario the reduction was 16·4 per cent.

Cheddar cheese production on the other hand was 20·8 per cent higher—7,782,185 lb. compared with 6,439,735 lb. in the first three months of 1943. Quebec led all the provinces with an increase of 1,261,248 lb. over the 507,855 lb. produced in the comparable period of last year.

Live Stock and Eggs.—Record deliveries of cattle, hogs, lambs and eggs have resulted in bottlenecks in storage facilities, packing plants and in transportation. However, these unprecedented supplies have meant that deliveries on food contracts with the British Ministry of Food have been more than gratifying. The surplus of beef is now being sent to the United Kingdom. Steps are being taken to arrange long-term contracts for these commodities.

Labour.—Farmers who were employed in non-agricultural work of an essential nature during the off-season, were returned to their farm duties as of April 1st. A total of 73,149 farm workers were granted permits to engage in other essential occupations during the late fall and winter months.

Plans for recruiting seasonal help in urban centres and utilization of high school students for farm work are well advanced this year. It is anticipated too, that farm labour may be moved from one area to another at peak seasons. Conscientious objectors and war prisoners will also be available. Special leaves are to be arranged for members of the armed services to assist with seeding and harvesting.

Land Values.—A rise in land values expressed in dollars may seem small, particularly when recent farm land values are reviewed in comparison with those reported thirty years ago. The averages include land in occupied farms. They are therefore necessarily low. These averages may seem very low when compared with those around Truro, Nova Scotia, in Southwestern Ontario, the Red River Valley in Manitoba or the Fraser Valley in British Columbia.

ESTIMATED VALUE OF LAND IN OCCUPIED FARMS PER ACRE, 1937–1943

Year	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Canada
1937	34	32	26	40	46	17	15	16	58	24
1938	36	29	27	40	45	16	15	15	60	24
1939	35	33	29	44	46	17	15	16	60	25
1940	32	28	24	44	46	16	15	16	58	24
1941	34	31	25	50	45	17	14	16	60	25
1942	37	33	30	55	48	18	15	17	62	26
1943	37	35	33	58	56	19	15	18	62	28
1914	39	28	26	47	54	32	24	21	150	37

There is no doubt that there is an active land market. The figures by provinces for the years 1937 to 1943 may well be compared with those of the single year 1914 and with those in the larger table published on page 13 of the February issue of the Economic Annalist. As pointed out in the February issue average farm land values in Canada were $37 in 1914. They rose to $48 in 1920 and flopped to $37 in 1923. That was not the end. The low point of $23 was reached in 1934 and there was no appreciable change until 1941. A rise in low land values may be looked upon as a good thing in many quarters. Rising land values under present circumstances are a sign of inflation. There may be nothing to be alarmed about now but danger spots are showing up and the land market will bear watching.

WARTIME GARDENERS HELP THEMSELVES

W. C. Hopper and R. Choquette

The fifteen most popular vegetables grown in city wartime gardens in seven cities and towns in Canada in 1943, in order of descending importance, were: carrots, beets, beans (green or wax), tomatoes, onions, potatoes, peas, lettuce, cucumbers, radishes, rhubarb, cabbage, turnips, corn (sweet), Swiss chard (table 1).

Table 1.—Percentage of Gardeners in Selected Towns and Cities Growing Different Kinds of Vegetables, 1943

Vegetables	Cornwall	Erie	Fort William	Liverpool	London	Saskatoon	Winnipeg	All towns and cities
	%	%	%	%	%	%	%	%
Carrots	82	86	79	79	85	92	92	86
Beets	71	79	72	76	79	91	89	82
Beans	74	75	63	84	81	82	81	77
Tomatoes	81	89	38	57	91	84	89	74
Onions	64	77	57	33	79	74	66	65
Potatoes	38	30	83	53	63	71	60	63
Peas	26	30	48	37	44	74	66	54
Lettuce	43	39	36	55	47	60	50	48
Cucumbers	53	27	35	67	32	62	43	47
Radishes	46	50	29	31	40	53	49	44
Rhubarb	23	31	24	48	38	64	47	43
Cabbage	49	37	46	12	31	47	31	38
Turnips	28	11	42	22	7	38	26	29
Corn (sweet)	24	27	18	23	29	32	32	27
Swiss Chard	8	18	10	43	21	27	24	22
Cauliflower	11	7	14	7	4	24	16	15
Spinach	7	8	10	14	9	21	21	15
Squash–Marrow	7	8	8	39	13	15	15	15
Celery	10	4	12	4	1	8	10	8
Peppers	24	29	1	1	9	6	11	8
Pumpkins	12	1	3	11	6	12	9	8
Asparagus	3	8	3	3	10	11	5	6
Broccoli	1	1	2	4	3	6	6	4
Melons	6	....	1	1	3	3	4	3
Kale	1	....	....	1	1	1	1	1
Egg plant	....	....	....	1	....	....	....	....

Carrots were grown in 86 per cent of the gardens and Swiss chard in 22 per cent. The percentage of gardeners growing the other vegetables mentioned varied between these two figures.

This information was obtained in a study made in the following cities and towns: Winnipeg, London, Saskatoon, Fort William, Cornwall, Fort Erie, Ontario and Liverpool, Nova Scotia. The information was gathered by the completion of questionnaires by personal visits to 1,613 representative householders who had wartime gardens through the Block Plan of the Women's Voluntary Services Centres of the Department of National War Services in the various cities and towns. The study was planned and the results tabulated and analysed for the Agricultural Supplies Board by the Economics Division of the Dominion Department of Agriculture. This article refers to a few of the interesting facts revealed by the study.

The questionnaire provided a place to record the growing of ten other less important vegetables and the percentages of those which were grown are shown in table 1. Unfortunately through an oversight, the questionnaire did not provide a space to record the growing of parsnips, consequently the number who grew parsnips was not shown. It is believed that the gardens included in this study are reasonably representative of all the gardens in the various places where the survey was made.

The average size of the 1943 wartime gardens varied from 1,797 square feet in Winnipeg to 4,225 square feet in Fort William (table 2). The suitability of the soil, the availability of space, the experience and interest in gardening in the various urban centres no doubt influenced the size of the gardens grown by householders.

TABLE 2.—AVERAGE SIZE OF WARTIME GARDENS IN SELECTED TOWNS AND CITIES, 1943

Fort William	4,225 square feet
Cornwall	3,627 square feet
Liverpool	3,331 square feet
Saskatoon	2,285 square feet
London	1,939 square feet
Fort Erie	1,896 square feet
Winnipeg	1,797 square feet
Average of all	2,715 square feet

The average quantity of vegetables grown per garden ranged from 338 pounds in Fort Erie, where the average size of the gardens was the second smallest, to 716 pounds per garden in Fort William where the average size of the gardens was the largest (table 3). The average production of all gardens was 552 pounds of vegetables. The types of vegetable grown no doubt influenced the quantities produced.

TABLE 3.—AVERAGE QUANTITY OF VEGETABLES PRODUCED PER GARDEN IN SELECTED TOWNS AND CITIES, 1943

Fort William	716 pounds
Saskatoon	622 pounds
Cornwall	591 pounds
Winnipeg	523 pounds
Liverpool	509 pounds
London	440 pounds
Fort Erie	338 pounds
Average	552 pounds

Of all the wartime gardens in the cities and towns surveyed, 82 per cent were at the home of the householder, about 15 per cent were in a nearby vacant lot and about 3 per cent in a community garden area (table 4). The percentages in the different locations varied somewhat from place to place.

TABLE 4.—PERCENTAGES OF WARTIME GARDENS LOCATED AT HOME, ON A NEARBY VACANT LOT OR IN A COMMUNITY GARDEN AREA IN SELECTED TOWNS AND CITIES, 1943

City or Town	At Home	On a Nearby Lot	In a Community Garden
Cornwall	94·9	5·1	....
Fort Erie	85·6	12·9	1·5
Fort William	80·8	17·0	2·2
Liverpool	97·8	1·5	0·7
London	92·6	4·4	3·0
Saskatoon	83·5	16·3	0·2
Winnipeg	68·9	22·6	8·5
Average	82·4	14·8	2·8

On the average for all the urban centres, 15 per cent of the 1943 wartime gardeners did not have a garden in 1942 (table 5). The new gardens in Winnipeg represented 30 per cent of all the 1943 gardens in that city while in Liverpool and Saskatoon the new gardens represented 8 per cent of the total.

TABLE 5.—PERCENTAGE OF HOUSEHOLDERS HAVING A GARDEN IN 1943 WHO DID NOT HAVE A GARDEN IN 1942, IN SEVEN TOWNS AND CITIES

City or Town	Per cent
Winnipeg	30
London	26
Fort Erie	16
Fort William	12
Cornwall	10
Liverpool	8
Saskatoon	8
Average	15

TABLE 6.—PERCENTAGE OF 1943 GARDENS WHICH WERE SMALLER, THE SAME SIZE, OR LARGER THAN THE 1942 GARDENS IN SEVEN TOWNS AND CITIES

Town or City	Smaller	Same	Larger
Cornwall	8·8	69·6	21·6
Fort Erie	1·0	67·0	32·0
Fort William	13·1	68·4	18·5
Liverpool	14·9	63·6	21·5
London	10·0	76·0	14·0
Saskatoon	9·3	71·6	19·1
Winnipeg	3·5	58·0	38·5
Average of all	9·0	67·1	23·9

TABLE 7.—PERCENTAGE OF GARDENERS IN EACH URBAN CENTRE CONSERVING DIFFERENT KINDS OF VEGETABLES FOR WINTER USE (BY STORAGE, CANNING, DRYING, PICKLING OR BY PLACING IN BRINE), 1943

Vegetable	Cornwall	Fort Erie	Fort William	Liverpool	London	Saskatoon	Winnipeg	All towns and cities
	%	%	%	%	%	%	%	%
Asparagus	....	....	10	....	....	5	5	5
Beans	31	47	52	53	36	55	48	49
Beets	45	65	45	40	43	60	54	53
Broccoli	....	....	25	....	....	9	5	9
Cabbage	32	35	32	6	19	34	25	30
Carrots	32	44	42	26	24	50	42	41
Cauliflower	25	20	22	11	....	25	16	21
Celery	7	20	7	....	....	17	8	10
Corn (sweet)	29	6	13	3	5	20	22	17
Cucumbers	56	72	46	31	41	54	50	49
Onions	29	33	18	4	28	30	32	27
Peas	14	5	25	20	....	44	28	30
Peppers	6	29	80	....	17	42	23	25
Potatoes	42	31	37	21	35	51	51	43
Pumpkins	24	100	30	33	25	40	33	35
Rhubarb	12	20	25	11	23	30	43	29
Spinach	11	18	13	16	....	17	3	11
Squash-Marrow	44	73	20	13	22	35	32	29
Swiss Chard	9	....	13	14	....	16	16	14
Tomatoes	58	81	32	24	60	52	64	55
Turnips	31	29	35	27	40	46	42	41

For the seven urban centres surveyed 67 per cent of the 1943 gardens were the same size as the 1942 gardens, 9 per cent were smaller and 24 per cent were larger (table 6). The percentage which had larger gardens in 1943 was highest in Winnipeg and lowest in London.

Each householder interviewed who had a garden was asked if vegetables were being conserved in some way for winter use, such as by storage in the cellar, by canning, drying, pickling, or by placing them in brine.

Of the vegetables listed, 55 per cent of the householders with gardens in all the towns and cities conserved some tomatoes for winter use (table 7).

The percentage of gardeners conserving other vegetables were: beets 53, beans (green or wax) 49, cucumbers 49, potatoes 43, carrots 41, turnips 41, pumpkins 35, cabbage 30, peas 30, squash or marrow 29, rhubarb 29, onions 27, peppers 25 and cauliflower 21.

The percentage of the householders keeping some of the different vegetables for winter use showed considerable range from place to place; for example, 81 per cent of the gardeners in Fort Erie conserved some tomatoes for winter use, while in Liverpool the percentage was only 24. With respect to beans grown in wartime gardens, in Saskatoon 55 per cent of the gardeners conserved some for winter use while in Cornwall the percentage of householders was only 31.

CANADA PLANS POST-WAR AGRICULTURE—II[1]

Frank Shefrin

Gradually the shape of things to come in Canadian agriculture is taking form. Committees appointed to consider the "what's" and "how's" of post-war farming are presenting their findings. The first comprehensive report to the Dominion Government was recently tabled in the House of Commons. In Alberta, an interim report was presented to the Legislature in March. In Manitoba, a joint committee of the Universities of Manitoba and Minnesota has been considering the effects of different types of peace on the economy of the mid-north American continent. Other Provincial committees are hard at work.[2]

The following article touches on the highlights of these three reports as they affect agriculture. As is to be expected, the reports mentioned carry parallel recommendations, which is an indication of the necessity for action along these lines.

Advisory Committee on Reconstruction

"The problems of agricultural reconstruction are of special importance to the Dominion of Canada, but because the solution of these problems is so directly dependent upon the international factors. . . . it is exceedingly difficult for any single country to formulate on its own initiative a comprehensive policy for the solution of the problems that it will confront in this field." Thus, the Advisory Committee on Reconstruction in its final report states its theme for post-war planning in agriculture.

The report is the result of more than two years of study and research. This Committee was organized first in September, 1941, and originally reported to the Minister of Pensions and National Health. The function of the Committee as listed at that time was to conduct studies and research in every field of Canadian economic and social life with a view to determining the facts upon which government reconstruction policies must be based.

In January, 1943, because of the increased attention being given to the matter of post-war planning by Departments and agencies of Government it was deemed desirable that the responsibility for advising the Government with respect to such plans be assumed by a body consisting of officials of the departments and agencies primarily concerned. The Advisory Committee on Economic

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[1] *See* Economic Annalist, August 1943, P. 37 for Part I.

[2] The findings of these Committees when made public will be dealt with in later articles.

Policy which was originally set up in September, 1939, was charged with the additional function of conducting investigations and studies in post-war problems in co-operation with the Advisory Committee on Reconstruction and other Government agencies. The Committee was made directly responsible to the Prime Minister and reports were made to the Privy Council.

Under the Advisory Committee on Reconstruction, there were six Subcommittees dealing with Agricultural Policy[1], Conservation and Development of Natural Resources,[1] Publicly Financed Construction Projects,[1] Housing and Community Planning, Post-War Employment Opportunities[1] and Post-War Problems of Women.[1] The recommendations of each Subcommittee were co-ordinated in the report of the Advisory Committee.

In its final report the Advisory Committee in referring to Agriculture, recommended that a special committee on the development of Canadian agriculture after the war should continue its deliberations with a view to assisting the Government in its international negotiations on matters pertaining to the solution of those problems directly dependent upon international relations such as trade, investments and monetary policy.

The Committee recognized the necessity for improved standards of nutrition in Canada. The attainment of a satisfactory nutritional level in Canada would mean substantial increases over pre-war levels in the aggregate consumption of milk, eggs, fruit, vegetables and meat. The report indicated that any effort to meet this demand would clearly necessitate great changes in the present pattern of the agricultural economy. The precise extent of these changes is not yet clear but the evidence suggests that it would also expand the total market for the products of the farm and increase the cash income of the farmer.

In dealing with the suggestion that industry be developed in rural areas to provide part-time work for farmers, the Committee stated that such plans for rural industrialization did not offer a solution of Canada's agricultural problems but may prove helpful in the maintenance of a more balanced and prosperous economy if other problems are solved.

In its concluding remarks on agriculture, the Committee stated, "It may be suggested that Canadian agriculture is a mirror that reflects the state of affairs of Canadian industry and indeed throughout the Western world. Something could undoubtedly be done through purely agricultural policy to improve the condition of the Canadian farmer but his prosperity and security for some years to come will be dependent upon the success of other segments of reconstruction policy at home and abroad."

Agricultural Policy.—In its final report the Subcommittee on Agricultural Policy considered the question of post-war planning in agriculture in greater detail. The subcommittee's task was to study the problems of Canadian agriculture with reference to (*a*) the desirability of raising the standard of living of all Canadians to a desirable nutritional level; and (*b*) the probable development in the international movement of Canadian agricultural products; and to recommend to the Committee on Reconstruction a comprehensive program for the rehabilitation of the country's agriculture at the end of the war.

First emphasis was placed on the importance of export trade to agriculture and the need for taking a definite lead in promoting at every opportunity, the adoption of such an international policy. Wheat is particularly dependent upon export markets and the Subcommittee dealt with it at considerable length. It suggested that a National Wheat Marketing Council be established to promote an increased export of Canadian wheat and wheat products. In order to bridge the transition period from the conclusion of hostilities and the re-establishment of peacetime trade relations and to facilitate such adjustments as may be necessary during this period, it was recommended that export commitments such as contracts or agreements, be negotiated with the Government of the United Kingdom.

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[1] The reports of these Subcommittees, along with that of the main committee, have recently been published.

Another recommendation was that action be taken in the domestic field to assure stability at reasonable price levels during the transition period.

The Subcommittee proposed that a careful study be made of national marketing legislation in order that it may meet the needs of changing conditions in the post-war period.

Co-operative organization was supported by the Subcommittee and it recommended that both the Dominion and Provincial governments use all reasonable means to encourage and assist in the organization and development of co-operative activities in relation to agriculture.

It recommended further that research in the industrial utilization of farm products should be extended and that the Government take the lead in this field.

The principle of raising the nutritional standards in the domestic field was endorsed and the Subcommittee specifically recommended supplying milk and the provision of hot lunches to school children.

Agricultural research, education, and extension services came in for consideration. It was urged that the Dominion Government increase its appropriations and enlarge its services on behalf of agriculture, both as regards economic research conducted by the Department of Agriculture and statistical service provided by the Dominion Bureau of Statistics, and the Subcommittee felt that similar steps should be taken as regards the natural sciences. A very interesting recommendation dealt with the desirability of providing financial assistance to agricultural colleges, for the expansion of research, teaching, and extension work in rural economics, including rural sociology. It was recommended that the facilities for vocational training in agriculture be extended, and that financing of capital expenditures for this purpose be shared by the Dominion and the Provincial Governments.

It was recommended that in the expansion of research and experimental work, special consideration be given to land utilization. The need of a national conservation program was emphasized. It was suggested that legislation similar to the Prairie Farm Rehabilitation Act be enacted to apply to all the provinces in Canada.

On the question of land settlement the Subcommittee issued a list of cautions. Past mistakes that have been made in land settlement programs should not be repeated. Thus, the Subcommittee indicated that all land settlement should be preceded by a soil survey and by classification of the land, and that sub-marginal lands be withdrawn from use for crop production and be set aside for reforestation, community pastures or other suitable use.

The Subcommittee felt that in addition to settling veterans on the land, measures should be taken to assist farmers' sons desiring to establish themselves on farms.

The question of farm credit has long been a controversial subject. The depression and drought years have made farmers very sensitive on this point. Although farmers have been able to pay off a great deal of their indebtedness in the last few years, it is felt that steps should be taken to provide a farm credit system that will be able to avoid many of the pitfalls of past years. The Subcommittee recommended that the services available through the Canadian Farm Loan Act be extended by liberalizing the conditions under which loans are made and that supervision costs be reduced by the use, if possible, of district agricultural agents; furthermore, that in recognition of the contribution of credit unions in meeting the short-term credit needs of agriculture, the Dominion Government join with the Provincial governments in giving encouragement and support to such organizations.

The subject of farm labour has been to the fore particularly in the last three years. In order to maintain an adequate farm labour force in rural areas it is necessary that labour conditions be made acceptable to these men. The Subcommittee indicated that inadequate housing on the farm contributes to the problems of obtaining farm help and any national housing scheme must, therefore, make provision for the construction of homes for hired farm workers.

The Subcommittee on Agricultural Policy, together with the Subcommittees on Conservation and Development of Natural Resources, and Post-War Problems of Women recommended a broad rural electrification program with federal assistance from public funds if necessary. This recommendation is important because it would provide not only a rural facility which is very much needed by farmers, but also because it might well form part of a post-war public works program.

Farm Housing.—The Subcommittee on Agriculture recommended that in the forefront of any reconstruction plans and as an integral part of any national post-war housing scheme, provision be made for assisting farmers to build, renovate, and improve farm buildings and to acquire labour saving devices for the farm home. The Subcommittee on Post-War Problems of Women emphasized the need for a housing program designed especially to meet the requirements of farm women to whom the farm home is a centre of all family activities and to a degree of farm production activities. The Subcommittee on Housing and Community Planning made specific recommendations. It stated that at least 125,000 new farm buildings were required—of these 100,000 for replacement and 25,000 to provide separate units for doubled up families. This figure would have to be revised if an increase in land settlement is contemplated. In addition, 188,000 dwellings are in need of external repairs. This takes no account of the internal conditions and facilities of farm homes.

The report recommended that nearly 100,000 homes be built in the first ten years following the peace—at the rate of 5,000 to 15,000 houses per year. This will, however, take care only of a part of the accumulated back-log plus the replacement of obsolete houses in the next decade.

Provisions are to be made for this building program in a redrafted National Housing Act which will include a special section on farm housing.

In order to reduce some of the economic barriers to the financing of new farm homes it was suggested that (1) the terms of owner-occupancy loans should be simplified (*a*) by the elimination of down payment requirements, and (*b*) by adjustment of payments to the crop season—in other words cash payments at the time of cash receipts; (2) the rate of interest on loans for construction of farm homes should be reduced considerably. Although no specific rate was mentioned in the report, the Subcommittee seemed to infer a reduction of the present interest rate to at least 3½ per cent.

The needs of farm labourers were also considered. It was recommended that the building of cottages for farm labourers on the farmer's own land should be facilitated by means of low cost loans, and measures designed to reduce construction costs.

The Subcommittee recommended that under the new Housing Act, provisions should be made to facilitate the setting up of inexpensive cottages in villages and small farm communities (where appropriate, their organization on a co-operative basis) and costs should be subsidized. This would allow the charging of rentals below the economic level for low income families.

In order to assure homes built to meet the specific requirements of the farming population, the Subcommittee suggested research in farm housing designs.

Farm Women.—The final report of the Subcommittee on Post-war Problems of Women contained a section on the problems of farm women. The report indicated that under present conditions young women are leaving the farms and older women are bearing intolerable burdens. Accordingly, the Subcommittee listed some of the special needs of farm women. It recognized that the woman on the farm has special problems due to the fact that she is a home maker engaged in productive work. It was on this basis that recommendations were made with regard to the extension of electrification of the farm home, farm housing, provision of a plentiful supply of running water and provision of farm sanitation. The report urged the establishment of adequate health services in rural areas. A rather striking recommendation was the one listing a number of remunerative enterprises in agriculture such as mushroom culture, dehydration of fruits and vegetables, boarding houses, etc., which might attract young women back to the farm. It was recommended that where necessary, the Department of Agriculture provide some sort of assistance to help establish young women in small enterprises.

The Post-War Reconstruction Committee of Alberta

The Post-War Reconstruction Committee of Alberta presented its Interim Report to the Legislature on March 10, 1944.

The Committee gave careful study to the many problems in agriculture. The amount of land and types of land available for farming were investigated. Trends in farm population were studied. A good deal of time was spent on the subject of irrigation and several specific recommendations were made as regards new projects. One of the highlights of the report is a discussion of the question of price control and stabilization and its relation to a high standard of living. The Committee favoured measures designed to control and stabilize prices and to assure a relatively stable income. It was felt, however, that "high living standards comparable to those available in urban communities cost much more in rural communities and on farms than in dense centres of population because, in areas of scattered population, distribution of utilities and social services costs are more. Since it is desirable to bring rural living standards more nearly in line with those of urban communities, consideration must be given to whether this could be done through price control alone because firstly, high prices discourage consumption, and secondly, the high prices necessary to establish the desired standards of living on farms might induce expansion of production entirely out of line with consumption requirements. The degree of price maintenance required might create problems as acute as those which it had been designed to solve. The difficulties are not insuperable but they do point to the necessity of giving careful consideration to first, the role of prices in this connection, and second, the advantage of supplementing price stabilization measures by other means of improving conditions for farm people."

The Committee also recognized the importance of international trade but on the whole, emphasis was placed on what could be done at home.

Forty-five recommendations as to agricultural policy in Alberta were made. Some of the major recommendations are:

Soil surveys of wooded areas should precede settlement and that land which is not well suited to agriculture should be excluded from colonization.

A thorough survey of land tenure methods should be conducted in order that an improved provincial land policy may be formulated.

The Alberta Government should give assistance to farmers in selecting suitable sites for dams and dugouts and planning stream diversions for farm purposes, where feasible.

Policies should be directed toward the production of products of the quality most acceptable to consumers in the markets in which they are to be sold. The flow of products should be regulated to meet the requirements of all markets.

In co-operation with the Department of Agriculture and the Department of Trade and Industry, as well as with Dominion authorities, the Alberta Research Council should pursue a vigorous program of chemurgic research.

Statistical services should be expanded, international contacts improved and broadened, and the distribution of statistical information completed with greater speed.

Particular attention should be given to the co-ordination and wherever necessary, the amalgamation of those services, dominion or provincial, which threaten to overlap.

The district agriculturist system should be expanded and that district agriculturists be specially trained to instruct and advise in farm management.

A lecturer on farm management should be added to the staff of the University of Alberta.

Educational facilities pertaining to co-operation and credit union development should be expanded as required to meet the growing demand.

A survey of rural electrification should be completed under the direction of the Research Council of Alberta.

The Mid-continent and the Peace

In planning the post-war world the questions that arise continually are—how shall we maintain prosperity at home and abroad? Where shall we sell our products and, if we do, will the buyers be able to pay for them? Will payments be made in cash or goods? How will Canada take payment? Then again, the Mid-West of Canada and the United States produce many products in common. Will they compete on the world market? Or will they act as an economic unit in terms of international trade?

An attempt was made to answer some of these questions in a little report called, "The Mid-Continent and the Peace." This report was prepared by the Universities of Minnesota and Manitoba at the request of heads of the governments of the State of Minnesota and the Province of Manitoba. The purpose of the report is to state some of the general proposals that should be considered by those who will definitely be assigned the great responsibility of preparing peace settlements. The authors attempt in this preliminary statement to advance only a few basic economic principles and suggestions.

The three general proposals dealt with in this study are:—

(1) A proposal that the countries of Western Europe greatly increase their importations of wheat, lard and pork from the surplus producing countries including Canada and the United States, Argentina and Australia. The dependence of international trade upon domestic security, the international trade position of Canada and the United States, and the post-war reorganization of Western European agriculture are dealt with under this proposal.

(2) A proposal that Canada and the United States co-operatively reorganize automobile industries that will secure for Canada maintained employment for her workers in her automobile factories and secure substantial reductions in the cost of automobiles to Canadian buyers; the United States section of the industry likewise will secure a larger output of automobiles and some, though perhaps, slight, reduction in costs.

(3) A proposal that the agriculture of the Prairie Provinces of Canada and of the Central Northwest United States continue after the war to follow further the lines of agricultural specialization that will have been developed by each country during the war.

The report points out that some measures of economic integration between the two countries were promoted by the Trade Agreements of 1936 and 1938. Again, during this war steps were taken whereby both countries agreed to more effectively utilize the production of oil-bearing crops. The report admits that the problem of integration cannot, of course, be viewed simply in terms of the Prairie Provinces on one hand, and the Northwest Central states on the other. It must be viewed in terms of the two economies, each taken as a whole.

In the very last paragraph of the report it is stated that in terms of the United States-Canada trade it seems unlikely that the American market is of great importance for Western Canadian agricultural products, except cattle or that the Canadian market is very important for American agricultural products. In other words, Canada must continue to look principally to European markets to absorb her main agricultural surpluses and the United States in turn, while less concerned than Canada about the external markets, must also continue to look to Europe as an outlet for her surplus agricultural products. The progress already made in wartime co-operation between the two countries ought to be continued and extended in every practical direction.

In the second report entitled "The Interests of Western Canadian Agriculture in the Peace Settlements", attention was given to what adjustments the Prairie Provinces might have to make under different types of peace settlements. In the first part of this report changes in agriculture in the Prairie Provinces during the years 1939-42 are described. The report concludes that during the war period shifts have, in the main, been such that the West is becoming relatively more dependent upon live stock and coarse grain for its income than formerly. Although these changes are a war phenomenon, such shifts will have an important bearing on the problem of post-war adjustment. This raises again the question of what markets Canada will be able to retain and what products will be demanded.

In the second section of the report entitled "Agricultural Readjustments in the Prairie Provinces", there is a discussion of the different types of readjustments that may be necessary with the different types of different peace settlements.

The major conclusion of the report is that with all the considerations listed in the report in mind, it can be said that Western Canada's hope for stability and modest development in the field of agriculture rests on a post-war settlement which will allow stabilization in the production of those commodities for which each region is best suited. This purpose can be achieved only by including substantial tariff reductions as part of the program of post-war adjustment. The report, however, recognizes the fact that regardless of the terms of the peace settlement internal adjustment in agriculture will have to be made.

This article has been descriptive. If a critical analysis of the various recommendations on post-war reconstruction were attempted it would be guided by two cardinal considerations: (*a*) does the reconstruction program provide full employment on the farm and in the city, and (*b*) does it result in an improvement in the social and economic well being of the community.

SUBSIDY PAYMENTS IN AGRICULTURE, 1943[1]

During the twelve months of 1943, the Dominion Department of Agriculture paid out in subsidies and bonuses close to 77 million dollars. Some of the subsidies were direct cash payments to farmers, for example, wheat acreage reduction, milk, butterfat, cheese. Some of the subsidies were indirect, for example, feed and feed fertilizer assistance. With the exception of the bonus on cheese quality, assistance to cheese factories and the Prairie Farm Assistance payments, all subsidy payments are a direct result of wartime economic conditions.

Subsidies and Farm Cash Income.—Estimates of farm cash income as prepared by the Agricultural Branch of the Dominion Bureau of Statistics are "cash income from the sale of farm products" and do not include bonuses or

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[1] See article "Agricultural Policy: Subsidies and Bonuses 1943", Economic Annalist, February 1944, p. 4.

SUBSIDIES PAID OUT BY THE DOMINION DEPARTMENT OF AGRICULTURE, 1943[1]

—	Canada	P.E.I.	N.S.	N.B.	Quebec	Ontario	Manitoba	Sask.	Alberta	B.C.
	$	$	$	$	$	$	$	$	$	$
Fluid Milk	4,968,477	22,250	188,775	136,304	1,314,072	2,219,833	261,709	137,188	211,341	477,005
Butterfat	15,724,915	231,166	359,649	371,487	4,825,545	3,810,740	1,721,330	2,286,856	1,902,125	216,017
Concentrated Milk	464,955	...	1,751	...	128,965	268,935	...	232	16,254	48,818
Milk—Cheddar Cheese	800,270	4,485	...	2,747	301,261	470,202	11,708	1,881	5,371	2,617
Cheese—Bonus on Quality	1,385,948	102	...	3,758	307,793	1,058,255	5,964	142	4,772	5,162
Cheese Factory Improvement	73,142	56	...	...	64,722	8,364	...	...	...	...
Fertilizer Subventions	860,742	50,158	57,354	55,336	348,771	338,063	...	...	...	11,061
Lime Subsidy	38,715	...	...	7,815	30,901	...	...	...	...	...
Feed Freight Assistance	15,940,883	413,510	1,300,163	993,938	5,406,057	6,445,953	...	...	...	1,381,262
Alfalfa Meal[2]	37,750	...	...	...	...	...	...	...	...	...
Feed Wheat Drawback[2]	2,233,466	...	...	...	...	...	...	...	...	...
Feed Assistance Plan B[2]	1,217,453	...	...	...	...	...	...	...	...	...
Sugar Beet Pulp	25,829	...	...	...	...	...	...	...	...	...
Wheat Acreage Reduction	31,017,799	...	...	...	...	...	5,053,227	17,091,384	8,873,188	...
Prairie Farm Assistance	806,474	...	...	...	...	...	100	514,521	291,852	...
Prairie Farm Income	67,275	...	...	...	...	...	3,662	31,318	32,295	...
Canning Crops	933,677	...	3,936	2,498	55,700	728,877	3,980	...	41,763	96,529
Berries for Jam[2]	200,000	...	...	...	...	...	...	...	...	...
Wool[2]	90,187	...	...	...	...	...	...	...	...	...

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[1] Subject to revision.
[2] Breakdown on Provincial Basis not available at time of printing.

subsidies paid by the Dominion or Provincial Governments to farmers except where these payments have become a part of the price per unit actually received by the producers. Specifically the following payments are included in the cash income estimates:

1. *Grains.*—In the Prairie Provinces where equalization payments have been included in the prices farmers have been receiving for oats and barley since September, 1943, these payments are included in the prices used to calculate the total value of sales.

In connection with wheat where the price paid to farmers was a guaranteed minimum price, this price was used for the cash income and, therefore, the losses, if any, of the Wheat Board might be classed as a subsidy and were included in the cash income estimates.

2. *Dairy Products.*—Prices received by farmers and used for cash income, estimates for milk sold to distributors, cheese factories and condenseries and butterfat sold to creameries include the various bonus payments which have been paid by the Federal Government.

3. *Vegetables.*—Subsidies or bonuses paid on canning crops were included in the prices used in preparing the cash income estimates.

4. *Fruits.*—Subsidies or bonuses paid through canneries or processors were included in the prices used in preparing the cash income estimates.

The principal bonus payments not included in the cash income estimates are Federal Government payments in the Prairie Provinces in connection with Wheat Acreage Reduction, Prairie Farm Assistance and Prairie Farm Rehabilitation Administration and special bonuses paid by the Provincial Governments, particularly in eastern Canada on hog production.

A COMPARISON OF FARMS IN THE BATTLE RIVER DISTRICT OF ALBERTA, 1930 AND 1942

B. K. Acton

Introduction.—An earlier article on the Peace River Country, entitled "A Comparison of Farms in the Grande Prairie District of Alberta, 1930 and 1942"[1] dealt with the progress of eighteen farms in a well developed farming area. This article on the Battle River District deals with an area of more recent settlement and closer to the fringe of established agriculture.

The Battle River or Notikewin District is situated about 60 miles north of Grimshaw, the latter being about 20 miles west of Peace River Town. The area comprises about six townships of choice clay loam parkland soil with gently undulating topography. The cover of the land at the time of settlement was small willow clumps making clearing of the land relatively easy. The 60 miles between the Battle River District and the shipping point at Grimshaw is poor grey wooded soil and muskeg, of gently rolling to rolling topography, quite unsuited to agriculture.

A few settlers were established in the Battle River District as far back as 1921 and 1922, but the big influx of farmers occurred during 1927, 1928 and 1929. This isolated community has made great progress during the 1930-42 period, although as yet farmsteads and roads have not been built to a point comparable to the Grande Prairie District.

The type of agriculture practised leans heavily towards grain production, partly because of its isolation from a shipping point. In 1929, it cost 25 cents per bushel to deliver grain at Grimshaw, 60 miles away. To-day grain is being delivered over an excellent dirt road for 7 cents per bushel.

Six of the farmers who co-operated in the 1942 survey had co-operated in the 1930 study.[2] This is a small sample, but since the trend of progress indicated in each case was quite similar, it is felt that the experience of these might be considered representative of the majority of settlers who established themselves in the twenties and have continued to farm.

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[1] The Economic Annalist, August 1943.

[2] 1930—Survey made by C. A. Dawson and R. W. Murchie, "The Settlement of the Peace River Country." 1942—Survey of the Peace River Country by the Dominion Economics Division, Dominion Department of Agriculture in co-operation with the University of Alberta.

Tenure, Size of Farm and Land Use.—The co-operators in both periods were land owners, but in 1942 two farmers were renting additional parcels of land, increasing the size of the farm units.

Size of farm and the acreage of improved land increased during the twelve-year period. The improved acreage has expanded nearly three times. The number of acres broken in 1941 as compared with 1929 decreased markedly, indicating that a larger amount of breaking was done in the early thirties.

TABLE 1.—AVERAGE SIZE OF FARM AND CROPS GROWN ON SIX BATTLE RIVER FARMS, 1929 AND 1941

—	1929		1941	
	Acres	Per cent of total acres	Acres	Per cent of total acres
Average size of farm	347	....	491	....
Acres improved	70	20	258	53
Acres wheat	13	4	117	24
Acres oats	22	6	33	8
Acres breaking	20	6	3	1

The acreage sown to wheat increased nine times between 1929 and 1941, partly because of better marketing facilities as compared with other farm products. Acres in oats showed a small increase due probably to local demand.

Farm Receipts.—Farm receipts increased from $981 in 1929 to $2,453 in 1941. Income from wheat sales showed the greatest increase due to increased acreages, thus more than compensating for a lower market price in the later period.

TABLE 2.—AVERAGE FARM RECEIPTS OF SIX BATTLE RIVER FARMS, 1929 AND 1941

—	1929		1941	
	Value	Per cent	Value	Per cent
	$		$	
Crop sales	495	50	2,010	82
Stock sales	105	11	260	11
Farm products	15	2	59	2
Other	366	37	124	5
Total	981	100	2,453	100

The only item showing a decrease as between 1929 and 1941 is listed as "other". This included custom work, labour on other farms, etc. In 1929 the settlers did more custom work such as threshing, clearing and road work, as a means of augmenting the farm income during the years of establishment. In 1941 the farmers did very little work off their own farms.

Farm Expenses.—Average cash farm operating expenses increased over the twelve-year period from $450 to $1,255. Capital expenditures for the same period declined by $98 from $484 in 1929 to $386 in 1942. More cash was expended in 1929 for breaking of land and construction of buildings than in 1941.

The Settlers' Home and Family.—During the twelve-year period, the settler has not only established a farm but has also made progress in community improvement. One settler has erected a new house and barn at a cost of $3,500. One other farmer added a new frame barn to his farmstead. The others are still living in and using the same buildings as in 1929. These are for the most part log structures.

Two of the settlers were bachelors in 1929 and have remained so. For the rest, since 1929 the child population has increased from 3 to 13. One of the original settlers is in the army and his wife is successfully running the farm.

School facilities are sufficient to permit a high school education for the children mentioned. Because of the isolation of the community, there are children 14 or 15 years of age who have never been far enough away from home to see a train.

Comparison of Average Farm Assets.—Average farm assets during the twelve-year period increased materially. The average size of farm and value of real estate owned increased. A slight decrease occurred in values of live stock, but value of live stock sold increased over the same period. Value of farm equipment increased sharply from $564 to $2,536. This was in line with the expansion in grain production.

TABLE 3.—AVERAGE ASSETS OF SIX BATTLE RIVER FARMS, 1929 AND 1941

—	1929		1941	
	Amount	Per cent	Amount	Per cent
	$	%	$	%
Real estate owned	5,225	78	7,334	68
Live stock	929	14	867	8
Equipment	564	8	2,536	24
Total	6,718	100	10,736	100

In both periods, the greatest proportion of the total farm assets was in real estate but the proportion declined by 10 per cent between 1929 and 1941. The total farm assets would indicate that the farms in this isolated community are becoming well established.

Conclusions.—The type of agriculture practised has moved steadily towards grain production. Live stock marketings have increased, but not to the same extent as grain production.

Farm receipts and cash operating expenses increased at a similar rate or by nearly three times, indicating that progress has been made in establishing economic farm units. Capital expenditures declined somewhat, with less being spent now on capital improvements, but more on farm equipment.

Farm assets increased by approximately $4,000, the result of the size of farm having increased and also because a fuller line of equipment being used in production.

Generally it may be said that the isolated community of Battle River has shown marked progress in establishing an agricultural settlement since the influx of farmers in the late twenties.

LIVE STOCK PRODUCTION ON IRRIGATED FARMS IN ALBERTA

B. H. KRISTJANSON AND J. L. ANDERSON

While the advantages of the more intensive crops such as sugar beets and canning crops in irrigation districts may readily be admitted, the market for such products, particularly in the sparsely-populated Prairie Provinces, is comparatively limited. Therefore it was incumbent upon the leaders in the development of irrigated farming in Western Canada to encourage suitable types of farming. This has been done largely through the encouragement of live stock production aided by the operation of co-operative buying and selling organizations. The growth of these co-operatives and what they have meant for farmers in southern Alberta is described in this article.

The development of co-operative live stock associations in the Eastern Irrigation District began in 1926 when three farmers shipped their live stock together, and out of this experience grew the Bow Slope Shipping Association. The live stock marketed were finished lambs which had been purchased as feeders from neighbouring ranchers. As a result of the success of these first feeder enterprises, other farmers became interested, and to meet their growing needs other co-operative associations were formed. These were organized to help finance the farmer in the feeder business as well as to provide facilities for buying and selling the live stock.

Live Stock Feeder Associations.—In the autumn of 1930 the experiment with "contract" lamb feeding was initiated on a co-operative basis by several ranchers and farmers in the Brooks area. In the first year 1,510 lambs were fed and marketed in this manner. The success of the undertaking was apparent and in the following season (1931-32) about 5,000 head were marketed co-operatively. The duties of supervision and marketing were assumed by a three-man board consisting of a breeder, a feeder and a neutral person. The duties of the board were to choose and place lambs in feedlots and to supervise their feeding and marketing. It was agreed that the surpluses due to price increases were to be divided evenly between the breeder and feeder. Thus, as an example, it may be assumed that a lamb weighing 60 pounds was valued on the market at 5 cents per pound and sold weighing 90 pounds at 6 cents per pound. The breeder received $5\frac{1}{2}$ cents per pound on the original weight or $3.30 leaving the feeder $2.10.

The volume of business increased so rapidly that it was decided to form a company. The company became the Brooks Live Stock Feeders Association being registered as such in 1932 under the Alberta Companies Act. Business continued with only minor adjustments in spreads, shrinkages and the assessments levied to meet operating expenses of the association. In 1933 the supervisory board added a cattle breeder and a cattle feeder to its membership in order to render assistance to cattle feeders. In the same year the association was authorized to borrow money from the banks for outright purchase of lambs to be placed with reliable feeders. A limited line of credit was established and has been maintained ever since but the greater proportion of feeding continued under the "contract" arrangement until other associations entered the picture. In 1934 the practice of setting a price on the "in-coming" lambs was discontinued and instead the breeder received 70 per cent of the net selling price on the initial weight. In other respects both cattle and lamb feeding contracts remained substantially the same.

Credit was a limiting factor in the expansion of live stock feeding. To obtain more credit the Bow Valley Live Stock Feeders Association was organized in 1938. By its organization an annual loan of $100,000 became available as a result of a guarantee against loss to the banks by the Province.[1] The main enterprise of this association at that time was cattle feeding but later it emphasized lamb feeding. In order to obtain still more credit a third organization, the South Slope Live Stock Feeders Association, was formed in September, 1941, and to this organization $100,000 became available as an annual loan with backing from the Province. For the time being, therefore, it appears that these three associations will be able to meet the requirements of the live stock industry in the Eastern Irrigation District.

The Effect of Increased Live Stock Production.—The data presented in table 1 were obtained through interviewing farmers in the Bow Slope area of the Eastern Irrigation District. Complete business statements for the years 1939 and 1940 were obtained from farmers in representative irrigation districts.[1]

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[1] The maximum guarantee available to each organization was $100,000.

Farmers obtaining 80 per cent or more of their total receipts from live stock showed a net income of $614 (table 1). That is to say, this group, on an average, had a balance of $614 per farm to meet payments on debt and for savings after defraying all expenses and allowing for the upkeep of the farm capital as well as providing a living for the operator and his family.

TABLE 1.—EFFECT OF SPECIALIZING IN LIVE STOCK PRODUCTION, BOW SLOPE AREA, EASTERN IRRIGATION DISTRICT OF ALBERTA, 1940-41

—		PER CENT RECEIPTS FROM LIVE STOCK			
		Less than 40 per cent	40–59 per cent	60–79 per cent	80 per cent or more
		Group I	Group II	Group III	Group IV
Acres irrigated crop land	Ac.	131	144	137	159
Feed purchased	$	106	313	441	1,411
Crop receipts	$	1,128	1,017	536	271
Live Stock receipts	$	535	1,006	1,557	4,498
Other farm receipts	$	95	227	154	240
Total farm receipts	$	1,758	2,250	2,247	5,009
Labour earnings[1]	$	472	609	666	1,148
Net income[2]	$	−95	210	404	614
Number of farms in sample	No.	9	24	25	17

[1] Labour Earnings are computed as follows: farm receipts minus farm expenses (including the value of unpaid family labour) less 5 per cent on the average capital value of the business during the year. To this amount was added rental for use of the house and the value of farm products consumed by the farm family.

[2] Net Income is determined as follows: Cash farm receipts less operating expenses and cash living costs, allowance being made for depreciation of buildings and machinery and any change in farm inventory. No deductions were made for family labour. It is the balance available for savings.

While it is not the purpose of this article to discuss in any detail the farms within the irrigated districts which have specialized in grain production, a brief reference should be made to them. These grain farms were located within the Bow Slope area and in the adjoining Canada Land and New West Irrigation Districts. Little or no grain was fed since 75 per cent or more of the receipts were obtained from the sale of grain on the cash market.

The grain farms had an average of 166 acres under irrigation, being similar to the irrigated acreage of farms in Group IV (table 1) but the net income on these grain farms was $-59. This is in sharp contrast to the returns earned on the live stock farms in Group IV.[2] Obviously those farms on which the grain was fed to live stock were the more successful. The effect of increasing the live stock feeding enterprise on net income is shown in table 2.

The higher net incomes on the farms having a greater proportion of the total receipts derived from live stock may have been due to a number of factors, the more important among them being: (1) size of business, (2) crop yields, (3) rate of grain feeding per unit of gain, and (4) the amount of grain fed to live stock. It will be seen that two of these factors in Groups II and III were almost constant. These were (1) the size of farm business as measured in terms either of total farm receipts or of total acres of irrigated land per farm (table 1), and (2) the crop yields as measured by the grain yield index (table 2). The variations which did occur were in the rate of grain feeding and the amount of grain fed to live stock. On the assumption then that the more significant factors have been included here and that these factors bore the same relationship to each other throughout Groups II, III and IV it was concluded that the progressively larger incomes were due to improved efficiency in feeding and the comparative advantages of marketing grain through live stock.

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[1] The 75 farm business records of irrigation farming in Alberta dealt with here were selected from a total of 550 such records obtained in studies conducted by the Economics Division of the Dominion Department of Agriculture in co-operation with the Department of Political Economy, University of Alberta.

[2] In other words, here is a comparison between two distinct farm types located within the same general area. For a discussion of earnings on several types of farms in the irrigated region of Alberta see, Spence, C. C., B. H. Kristjanson and J. L. Anderson. Will irrigation Farms in Alberta Pay the Cost of Their Development? The Economic Annalist, February 1944.

TABLE 2.—FACTORS ASSOCIATED WITH INCREASED EMPHASIS ON LIVE STOCK PRODUCTION, BOW SLOPE AREA, EASTERN IRRIGATION DISTRICT, 1940-41

		PER CENT RECEIPTS FROM LIVE STOCK			
		Less than 40 per cent	40–59 per cent	60–79 per cent	80 per cent or more
		Group I	Group II	Group III	Group IV
Bushels of wheat produced per farm	bu.	1,311	1,640	1,028	1,129
Cwt. of grain produced per farm	cwt.	1,182	1,865	1,517	1,844
Cwt. of grain fed per farm	cwt.	375	832	934	1,593
Grain yield index[1]	%	96	100	97	107
Grain feeding efficiency index[2]	%	87	76	89	115
Proportion of grain produced being fed	%	32	45	62	86
Number of farms in sample	No.	9	24	25	17

[1] Average yield per acre for the crop year of wheat, oats and barley for all farms in the four groups=100.

[2] Average rates of feeding all stock=100. Thus, where less than average amounts of grain were fed the index was above 100.

As the proportion of the total receipts which was obtained from live stock increased from 40 per cent in Group II to over 80 per cent in Group IV the feeding efficiency index rose from 76 to 115 and the proportion of the grain fed on the farm increased. Comparatively little grain was purchased for feeding purposes.

Market Prices.—Individual commodity price levels affect any comparison of farm types which are characterized by varying emphasis on live stock production. The two extreme types used in the foregoing analysis are (1) those which marketed most of the grain produced through live stock and (2) those which marketed most of it directly. On the basis of the twenty-one year period (1922-42) price relationship between grain and live stock, it may be noted that during the period covered in this study grain prices were relatively low.[1] Therefore, in the long run, the position of the grain farms has been considerably better than the analysis of the business for the years 1940-41 has indicated. But it appears that even when allowance has been made for this maladjustment in prices that live stock farms have had an advantage over the grain farms.

Summary.—From the foregoing discussion it is evident that the success of the farm enterprise depends (in many areas) in no small measure upon the extent to which live stock are used as a means of marketing the farm grains. A diversified farm is to be preferred to a specialized grain farm under irrigation but this analysis of live stock production in the Bow Slope area has demonstrated the advantages of an ever greater emphasis on the live stock enterprise. Furthermore, in addition to the increased income with greater live stock emphasis there are to be considered also the advantages from this type of farming in the matter of improved farming practices.

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[1] Recently the base period taken for price indices has been the year, 1926. It was felt here that the only fair comparison of prices would be one made on the basis of an index constructed with a base covering the entire period for which price data were available. Therefore the base period for the index used here was the twenty-one year period 1922-42.

While there has been considerable effort expended by various officials and organizations toward achieving a greater diversification of farming in these areas, the change has been gradual. In facilitating this shift in type of farming the formation of live stock feeder associations has played an important part and these organizations appear to be a permanent feature of those irrigation districts of Alberta where there is no market for specialty crops such as sugar beets and canning crops.

CATTLE RANCHING IN WESTERN CANADA

Some of the main factors affecting the success or failure of cattle ranching as a business may be summarized briefly. For instance, it appears that the minimum size of a ranch which would perpetuate itself and provide a satisfactory standard of living for a man and his family consists of about 250 ranch units. One unit is equivalent to one head of cattle or one horse or five sheep or five hogs or one and a half acres of saleable crop. Success was obtainable in a marked degree only when the size exceeded 300 ranch units. While there were some indications of a point of diminishing returns being reached at about 1,500 ranch units, available data were not sufficient to warrant definite conclusions.

As the size of ranch increased specialization in the cattle enterprise also tended to increase. The price-cost relation of the cattle enterprise as compared to other phases of the business was such that increased specialization brought about a slightly downward trend in the year 1938-39, but in the following two years the trend was markedly upward as specialization in the cattle enterprise increased.

Calf crop was one of the major factors affecting ranch income. In all three years studied an increase from 50 to 80 per cent calf crop resulted in an increase of about $2.50 in ranch income per ranch unit. As control of this factor is largely in the hands of the operator, good management in this respect is a primary necessity.

Efficiency in the use of labour is another place where good management can materially affect returns. This is of greater importance in years of low prices when the margin of profit is small than when cattle prices are more favourable. In 1938-39, an increase in ranch units per man equivalent from 80 to 160 was associated with an increase in ranch income of over $2. In the later years the corresponding increase in income was less than $1 per unit.

Economy in the use of winter feed had a material effect on ranch income during the normal winters which occurred during the second and third years of the survey. In these years an increase of feed per animal unit from one-half ton to two tons resulted in a reduction of income of over $2 per unit. However, in the opening year 1938-39, an increase of feed had the opposite effect, the same variation resulting in over $1 increase in income per unit. This would appear to be a carry-over effect from the winter of 1938. Losses in the spring storm which occurred that year were heavier on those ranches that fed less and in addition the poorer conditions of the stock was reflected in the lower sales prices in the fall. It would appear desirable then that substantial feed reserves should be carried at all times and judicious use of these to keep the cattle in a good strong condition is worthwhile.

This note on ranching is based on an excerpt from a preliminary analysis of the cattle ranching business conducted by the Economics Division in co-operation with the Experimental Farms Service.

One Hundred Years of Co-operative Business

Co-operation is older than recorded time. But the beginning of the co-operative movement of to-day originated in the English town of Rochdale. There in 1844, 27 poor men and one equally poor woman organized the Rochdale Equitable Pioneer Co-operative Society. This small group opened a little grocery store. The society is still in existence and has at present about 50,000 members. The principles it laid down have served as a guide and model for the co-operative movement in all countries in the past 100 years. It is appropriate that the one hundredth anniversary of this Co-operative Society be celebrated by all co-operators.

From this modest start, the co-operative movement in Great Britain expanded rapidly. Within twenty years, there were enough associations to form the Co-operative Wholesale Society. This Society has now become the greatest distributive business in the British Empire. In time the Wholesale went into manufacturing. Together with the Scottish Co-operative Wholesale, this business now conducts 153 different manufacturing enterprises and produces food, clothing, household goods and many other needs for 9 million member-families.

The co-operative way of doing business was adopted by other countries. In 1895, the national federations of co-operative societies in different countries united to form the International Co-operative Alliance. Before the Nazi régime this Alliance was made up of 124,000 co-operative societies in 39 countries and with 100 million members.

Although the co-operative movement in occupied Europe has been temporarily destroyed, plans are being made for the reorganized co-operatives to take an active part in rebuilding post-war Europe.

The co-operative movement has expanded greatly in China and India. In China the co-operatives contribute greatly to China's resistance to Japanese aggression.

It is quite natural that in food importing countries such as England and Germany co-operation should begin among consumers, whereas in the food exporting countries such as the United States, Canada, New Zealand and Australia, the principal emphasis should be upon agricultural co-operative marketing systems. In recent years, the consumer co-operatives have made great advances in both North and South America.

To-day in Canada membership in producer and consumer co-operatives exceeds one-half million and the total business has passed the quarter billion dollar mark. In many rural areas, farmers can market the entire output of their farms on the co-operative plan. The farmer may deliver his grain to a co-operative elevator, live stock to a live stock shipping association, and milk to a co-operative dairy. He may also purchase a large portion of his farm supplies and household necessities from a co-operative store, or gasoline and oil from a co-operative filling station.

The greatest contribution of the early Rochdale Pioneers lies in the principles they expounded—principles that have been accepted by all, such as one man one vote; limited returns on share capital; dividends to patrons based on volume of business; class, religious and political neutrality. They also introduced these sound business practices—trading on a cash basis; goods sold at prevailing local prices; accounts properly kept and audited and reports presented regularly to members; and education of members and non-members with reference to co-operative principles.

A COMPARISON OF EARNINGS ON THE BLACK AND GREY-WOODED SOILS IN ALBERTA

A large proportion of the future land settlement in the Province of Alberta will take place on the grey-wooded soils. Currently, therefore, a great deal of interest is manifest in the probable capacity of these soils for agricultural production. In this connection in a study of farming on the Pioneer Fringe of settlement a comparison of the earnings on the two soil types in the Bonnyville area was made.

The farms on the grey-wooded soil examined in this study were located on the two better grades of grey-wooded soil, namely, series 500 and 600. Series 700 was uncommon in this area but where it did occur its inferiority as a soil for general agricultural production was quite obvious. The conclusions reached here apply only to the better grades of the grey-wooded soil.

Since the grey-wooded soils are inferior to the black soils one would expect a difference in the earnings of the farms on these two soil types. But the farms on the grey-wooded soils were settled so recently that no appreciable decline in crop yields has taken place. Furthermore, the live stock enterprise formed such a large part of the farm business that the effect of soil type on income was smaller than would have been the case if less live stock had been kept.

From the table, it may be observed that the Labour Income was $3 greater for farms on the grey-wooded soil and that, judged by the respective Family Labour Earnings, the farms on the grey-wooded soil compared quite favourably with those on the black soil. From the standpoint of the Farm Surplus, however, the farms located on the black soil had a surplus of $350 per farm compared with an average of $304 for the farms on grey-wooded soil. Furthermore, the cash family living expenditures were about $150 greater for the year on farms in the former group.

A Comparison of Farm Returns on Two Soil Types in the Bonnyville Area, Alberta, 1942-43

—		Soil Type	
		Black	Grey-Wooded
Number of Farms	No.	43	82
Total acres operated	Ac.	301	295
Acres cropland	Ac.	136	103
Productive Animal Units	No.	19	14
Labour income	$	465	468
Family labour earnings	$	862	814
Farm surplus	$	350	304
Cash family living expenditures	$	701	550

The farms on the black soil had an average of 136 acres under cultivation and 19 productive animal units in comparison with 103 acres of cropland and 14 productive animal units on farms located on grey-wooded soil. The earnings of the farms on both soil types were quite similar in spite of the smaller size of business on farms in the latter group. The total farm receipts were $1,619 per farm on the black soil and $1,332 in the grey-wooded group, but on farms in the latter group the cash operating expenses per unit of output were smaller. This, however, did not compensate fully for the greater size of business which had been attained on the better soil.

This does not mean that the soil type is an unimportant factor in this area. It merely means that for a number of years after breaking, the better grades of grey-wooded soil had sufficient plant nutrients to permit a mixed type of farming to be carried on with results comparable to those obtained on the black soil. No doubt, in the long run, the farms on the black soil will enjoy a comparative advantage.

The national income of Canada has increased rapidly since the outbreak of the war, and, by 1943, had attained the highest level in the history of this country. There has been also a considerable increase in cash income from the sale of farm products.

Table 1.—National Income and Cash Income from Sales of Farm Products in Millions, by Years, 1937 1943

——	1937	1938	1939	1940	1941	1942	1943
	$	$	$	$	$	$	$
National Income[1]	4,342	4,246	4,862	5,400	6,500	7,500	8,800
Cash income from sale of farm products[1]	645·7	664·3	722·3	765·8	914·0	1,114·9	1,396·6

[1] Dominion Bureau of Statistics reports.

Wartime restrictions have undoubtedly been a stabilizing factor in the disposition of the increase in farm cash incomes. There are, however, a few unrestricted channels into which income, above that required for normal expenditures, may be directed. These channels include savings, purchase of additional land and repayment of farm debt.

Local bankers report that there has been an increase in farm savings both in the form of deposits and in purchases of Victory bonds. This increase has occurred mainly in the past two or three years. Again, no noticeable increase in purchase and sale of farm lands occurred until 1943; and, while it is expected that activity in the transfer of farm lands will continue, and may even increase in 1944, it would seem that, so far, only a small proportion of the increase in farm incomes has been used to expand farm holdings. The remaining channel to which "surplus" farm income might be applied is that of the reduction of farm debts, particularly debts secured by mortgage or agreements of sale.

Unless it was during World War I there has never been a period in the history of the Prairie Provinces when farmers have been in so favourable a position to reduce their indebtedness as during the past two years; and it is evident that they have taken advantage of this opportunity. According to a tabulation made by the Dominion Mortgage and Investments Association, and based upon the records of twenty-five member companies with large investments in prairie farm mortgages and agreements for sale, the total amount owing on this form of indebtedness by prairie farmers was reduced between 1937 and 1943, by 23·2 per cent. The reduction in Saskatchewan was 16 per cent and in Alberta 30 per cent. Between 1942 and 1943, Alberta farmers reduced their indebtedness to the companies by 14·2 per cent.[1]

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[1] Annual report, February 26, 1943, Dominion Mortgage and Investments Association.

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THE ECONOMIC SITUATION

Wholesale prices in Canada were slightly lower in May than in April, the index receding 102·9 to 102·5. Increases in prices of oranges, lemons, rosin, steers, lambs, lard, spruce and hemlock, hay, onions were more than offset by the decreases in potatoes, rye, lobster, furs, butter, milk and eggs. During the first five months of 1944, the index of wholesale prices averaged 102·7 compared with 98·3 in the same period of 1943. The index of wholesale prices of Canadian farm products dropped from 104·0 to 101·8, reduced subsidies on milk effective May 1 being largely responsible but the reduction in prices of potatoes, rye and eggs also contributed. Preliminary indexes for June reflected a slightly firmer position for prices of Canadian farm products. Live stock prices were a little stronger and field product prices averaged higher because of improvement in prices of tobacco, hay and onions.

Retail Prices.—The cost of living index at June 1 was 119·0 compared with 119·2 at May 1. The food index dropped from 131·7 to 131·1. The decreases occurred in potatoes, eggs, butter and onions. Prices often increase in June. During the previous three years, the increases have been 2·8, 1·9 and 1·0 points. A slight reduction occurred in the index of home furnishings and services. During May the amount of money spent in retail stores by purchasers was the same as in April but was 9 per cent more than in May, 1943, and the dollar value of retail sales during the first five months of 1944 was 7 per cent higher than sales in the first five months of 1943.

Physical Volume of Business.—The index of physical volume of business was 236·0 in May compared with 239·5 in April. The index of industrial production was 263·8 in May against 270·0 in April. The index of manufacturing declined from 291·3 in April to 286·4 in May. The May index was a little more than two points below the index in May, 1943. Mining and construction also recorded less activity. Gains were reported in meat packing, tobacco processing, rubber, newsprint, steel and coal production, electric power output was very heavy, the index being 165 compared with 153 in April. Over the first five months of the current year, the physical volume of business index was more than five per cent higher than in the first five months of 1943.

Dairy Production.—The output of creamery butter in Canada for the month of June was 45,541,104 lb. compared with 46,550,623 lb. in June, 1943, a decrease of 2·2 per cent. Over the first six months of 1944 creamery butter production was 135,193,324 lb. contrasted with 142,395,447 lb. in the first half of 1943. This represents a decline of 5·1 per cent.

Cheese production shows a substantial increase. In June the production was 30,884,616 lb. or 14·6 per cent more than in June, 1943, when production was 26,961,619 lb. In the first half of 1944 cheddar cheese production was 23·1 per cent more than in the corresponding period of 1943.

Ice cream production was also higher than in the first half of the previous year. The output of concentrated milk to the end of June this year was 5·1 per cent higher than during the first half of 1943.

ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Living Costs and Production Indexes Computed by Dominion Bureau of Statistics: Index of Industrial Wage Rates Published by Department of Labour

Year	Wholesale Prices 1926=100				Retail Prices		Production and Wages 1935–39 = 100		
	All commodities (1)	Farm products (2)	Field products (3)	Animal products (4)	Urban Living Costs 1935-1939 =100 (5)	Farm Living Costs 1935-1939 =100 (6)	Physical volume of business (7)	Industrial production (7)	Industrial wages rates (8)
1913	64·0	64·1	56·4	77·0	79·7	79·6	....	....	54·9
1914	65·5	70·2	65·4	78·3	80·0	82·0	....	....	55·6
1915	70·4	77·9	76·9	79·5	81·6	86·3	....	....	56·0
1916	84·3	89·8	88·8	91·4	88·3	93·6	....	....	59·9
1917	114·3	128·5	134·5	118·4	104·5	111·6	....	....	68·7
1918	127·4	132·6	132·0	133·6	118·3	131·4	....	....	80·7
1919	134·0	146·7	142·6	153·5	130·0	143·0	62·3	56·0	94·8
1920	155·9	160·6	166·5	150·8	150·5	170·7	65·9	59·7	112·7
1921	110·0	103·7	100·3	109·5	132·5	139·5	58·1	51·6	102·7
1922	97·3	88·0	81·4	99·0	121·3	127·5	69·1	65·7	95·9
1923	98·0	81·5	73·3	95·1	121·7	127·9	74·7	71·6	98·6
1924	99·4	88·1	82·7	97·2	119·5	125·1	73·9	70·4	99·8
1925	102·6	101·0	98·2	105·6	120·6	123·6	79·4	76·7	98·8
1926	100·0	100·0	100·0	100·0	121·8	120·9	87·3	85·5	99·4
1927	97·7	102·1	99·9	105·7	119·9	119·5	92·7	90·3	101·5
1928	96·4	100·7	92·6	114·3	120·5	118·3	102·4	100·7	102·7
1929	95·6	100·8	93·8	112·5	121·7	117·4	109·6	108·9	104·5
1930	86·6	82·3	70·0	102·9	120·8	113·7	95·6	92·3	105·2
1931	72·1	56·3	43·6	77·6	109·1	103·7	81·7	77·3	101·7
1932	66·7	48·4	41·1	60·7	99·0	97·7	68·7	63·2	94·5
1933	67·1	51·0	54·8	59·7	94·4	95·7	69·6	65·6	89·6
1934	71·6	59·0	53·8	67·7	95·7	97·8	82·2	80·0	90·5
1935	72·1	63·5	57·3	74·0	96·2	97·9	89·4	88·5	93·1
1936	74·6	69·4	65·8	75·3	98·1	98·3	98·0	97·8	94·8
1937	84·6	87·1	88·3	85·0	101·2	102·8	107·2	108·4	101·8
1938	78·6	73·6	69·0	81·3	102·2	101·9	98·6	98·0	104·9
1939	75·4	64·3	54·2	81·2	101·5	99·4	106·9	107·4	105·3
1940	82·9	67·1	55·9	85·2	105·6	108·6	124·3	132·4	108·4
1941	89·9	71·2	56·5	95·8	111·8	114·2	165·0	177·5	119·2
1942	95·6	82·5	66·5	109·2	116·8	119·2	202·2	228·0	127·5
1943	99·9	95·9	81·6	119·9	118·4	121·5	235·9	273·0	....
1943									
April	98·9	92·3	76·8	118·2	117·6	121·1	236·9	274·4	....
May	99·2	92·8	77·4	118·7	118·1	....	231·8	267·8	....
June	99·5	94·4	79·4	119·4	118·5	....	232·4	267·2	....
July	100·1	96·4	82·6	119·4	118·8	....	236·3	270·2	....
Aug	100·4	97·5	84·9	118·6	119·2	121·9	241·0	276·8	....
Sept	101·2	97·9	86·1	117·6	119·4	....	236·7	280·9	....
Oct	101·9	103·6	90·8	125·0	119·5	....	239·5	283·3	....
Nov	102·4	104·2	91·3	125·7	119·4	....	242·9	282·5	....
Dec	102·5	104·6	91·7	126·1	119·3	....	248·8	282·0	....
1944									
Jan	102·5	104·0	92·1	123·8	119·0	....	247·0	275·4	....
Feb	102·7	104·3	92·5	124·1	118·9	....	241·6	279·5	....
Mar	103·0	104·5	93·0	123·7	119·0	....	247·8	282·7	....
April	102·9	104·0	92·4	123·4	119·1	....	239·5	270·0	....
May	102·5	101·8	91·2	119·6	119·2	....	236·0	263·8	....
June	102·5	102·0	91·1	120·2	119·0		238·8	266·8	

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1. See Prices and Price Indexes 1913-1928, pp. 19-21, 270-289 and 1913-1939, p. 17.
2. Wholesale prices of Canadian products of farm origin only. See Prices and Price Indexes 1913-1937 p. 52, and Monthly Mimeographs 1943-44.
3. Wholesale prices of grain, fruits and vegetables.
4. Wholesale prices of animals and animal products.
5. See An Official Cost of Living Index for Canada, 1940.
6. Index numbers of Farm Family Living Costs 1913-38 and Farm Living Expenditures 1934 and Farm Family Living Costs Mimeograph.
7. Monthly Review of Business Statistics, p. 8, and Monthly Indexes of the Physical Volume of Business in Canada, supplement to the Monthly Review of Business Statistics November, 1932. Yearly index numbers for 1943, subject to revision.
8. Department of Labour, *Labour Gazette,* December 1943.

Live Stock Marketings.—Cattle marketing at public yards and plants for the first 28 weeks in 1944 totalled 661,289 compared with 530,387 in the similar period of 1943. Marketings of calves in comparable periods were 383,903 against 358,106 in the same period of last year. Sheep have also moved to market in larger numbers, 262,097 being marketed in the first 28 weeks of this year contrasted with 207,592 in the same period of the previous year. Hog marketings show a very large increase, 5,310,269 as against 3,409,333 in the first 28 weeks of 1943. Deliveries of bacon for export to Britain have been far in excess of expectations.

Crop Conditions.—The Agricultural Branch of the Dominion Bureau of Statistics reports crop conditions as being generally favourable. More rain is needed in some districts. Dry weather has prevailed for a considerable time in the Maritimes and cereals require rain. Potato and vegetable crops are doing well. The hay crop is below average in Quebec. Pastures need rain. Grain crops vary from fair to good. Good hay weather has prevailed in Ontario but pastures and late sown crops need more moisture. The general outlook is for more than average yields.

In the Prairie Provinces, the prospect for a good crop continues to be favourable. Dry areas in Southern Alberta, Southwestern and West central Saskatchewan are exceptions. Harvesting early barley and oats and wheat began in Manitoba during the week beginning July 23rd. Some hail damage has been reported in Saskatchewan and Alberta. A severe infestation of Sawfly is reported in Southern Alberta.

Crop conditions in British Columbia are good, following two weeks of warm fine weather. Marketings of early fruit and vegetables indicate good yields.

Fruit and vegetable crop reports at the end of June indicated a 21 per cent increase in the apple crop as compared with the 1943 crop and a 14 per cent increase over the ten-year average 1934-43. The pear crop is estimated at 19 per cent more than 1943 but 15 per cent smaller than the ten-year average 1934-43. The plum and prune crops are currently estimated as a little smaller than in 1943 but 12 per cent larger than the 1934-43 average.

Peach production is estimated to be slightly more than the 1934-43 average of 1,124,400 bushels. This would represent an 80 per cent increase over production in 1943. The grape harvest is estimated at a 6 per cent increase compared with last year's crop and 16 per cent above the 1934-43 average crop.

Labour Supply.—Farm labour continues to be very scarce despite efforts of Selective Service to shift workers to areas where the need is greatest. Wages have increased very sharply. Wages paid to farm help as reported by the Bureau of Statistics averaged higher than at the same date in 1942 but not as high as those reported in August, 1943. Including board, the average rate for the country as a whole was $2.76 per day compared with $2.39 per day as of May 15, 1943. The rates, of course, vary from area to area and from province to province. Day wages were highest in British Columbia and lowest in Prince Edward Island.

"An ever increasing need exists for young partners to carry on the farm business. Farmers are getting older. On the other hand, each year thousands of farm boys are confronted with the task of selecting and preparing themselves for their life work. In many cases, a suitable father and son farm partnership agreement is a good means of helping both situations. Now is a good time to encourage able young men to establish themselves on farms." Although this was written for American farmers it applies equally well to Canada. Elton B. Hill, in his bulletin "Father and Son Farm Partnerships" issued by the Michigan State College, discusses the various problems involved in a father-son partnership, and makes some helpful suggestions.

THE DAIRY INDUSTRY IN WARTIME

B. A. CAMPBELL

Production Trends

In 1939 the total production of milk in Canada was 15·7 billion pounds and by 1943 it had increased to 17·5 billion pounds. This represented an increase of 1·8 billion pounds of milk or 11·4 per cent of the amount produced in 1939. This expansion did not come about entirely as a matter of course and while physical factors such as climate favoured higher production during this period, rising returns for all dairy products encouraged farmers to produce more. At the same time, the government employed subsidies and other means in directing the movement of milk into definite uses. In 1943 fluid sales of milk totalled 3·7 billion pounds, an increase of 23 per cent over 1939 sales. Creamery butter production in 1943 was the highest on record and totalled 312 million pounds. Milk used in the production of concentrated milk products totalled 588 million pounds, as compared with 329 million pounds in 1939 and milk used in the manufacture of ice cream totalled 270 million pounds, more than double the amount used in 1939. Production of cheddar cheese in 1943 totalled 162·3 million pounds; although this was less than the output in 1942, it was 40 million pounds more than was produced in 1939. Production of total milk, butter and cheese by areas is shown in tables 1, 2 and 3.

TABLE 1.—TOTAL MILK PRODUCTION IN CANADA IN MILLIONS OF POUNDS 1939–43(1)

Year	Maritimes	Quebec and Ontario	Prairies	British Columbia	Total
1939	983	9,911	4,713	539	16,146
1940	966	9,912	4,858	547	16,283
1941	992	10,123	5,078	560	16,753
1942	1,092	10,631	5,197	568	17,488
1943	1,093	10,554	5,295	575	17,518
Per cent change 1943–39	11·1	6·5	12·3	6·7	8·5

(1) Agricultural Branch, Dominion Bureau of Statistics.

TABLE 2.—CREAMERY BUTTER PRODUCTION IN CANADA IN THOUSANDS OF POUNDS 1939–43(1)

Year	Maritimes	Quebec and Ontario	Prairies	British Columbia	Total
1939	11,607	168,246	81,674	6,086	267,613
1940	11,778	161,363	85,394	6,189	264,724
1941	13,728	162,509	103,549	6,062	285,848
1942	15,165	154,135	109,934	5,357	284,591
1943	19,006	168,077	120,356	4,871	312,310
Difference 1943/39	+7,399	−169	+38,682	+1,215	+44,697
Difference dairy butter 1943–39	−5,754	−12,332	−12,922	−1,044	−32,052
Difference total butter 1943–39	+1,645	−12,501	+25,760	−2,259	+12,645
Per cent change total butter 1943–39	+11·7	−6·4	+20·7	−25·7	+3·6

(1) Agricultural Branch, Dominion Bureau of Statistics.

While it may be observed that an increase in total production of milk was general in all parts of Canada the most striking change has taken place in the prairie provinces where the production of milk in four years increased more than 12 per cent. This was due in part to more favourable prices of dairy products in relation to grain prices. Since the start of the war many prairie farmers have changed from straight grain growing to mixed farming with the result that creamery butter production particularly has increased to such an extent that in 1943 production in the three prairie provinces made up more than 38 per cent of total produced in Canada. With the increase in grain prices during the last year, it is expected that there will be a levelling off of dairy production in the prairie provinces.

TABLE 3.—CHEDDAR CHEESE PRODUCTION IN CANADA IN THOUSANDS OF POUNDS 1939–43 (¹)

Year	Quebec	Ontario	Other Provinces	Total
1939	26,271	88,518	7,983	122,772
1940	34,989	100,004	9,692	144,685
1941	38,368	103,446	9,398	151,212
1942	64,554	128,348	13,313	206,215
1943	48,440	105,098	8,806	162,344
Per cent increase 1943–39	+84·4	+18·7	+10·3	+32·2

(¹) Agricultural Branch, Dominion Bureau of Statistics.

The increase in milk production in the Maritimes has also been notable and here too many farmers have changed from one crop enterprises such as apples and potatoes to more live stock. The increase in the production of cheese in Quebec in the four-year period has been very marked. The feed grain policy of the Dominion Government has aided in making the increased production of live stock and dairy products possible.

In spite of growing difficulties in securing competent labour and adequate machinery, the dairy farmers of Canada have increased production to meet most of the demands of the domestic and export markets.

Price Trends

Farm Returns.—Returns to farmers for milk have increased sharply since 1939. Table 4 shows relative returns (including all subsidies) per hundred pounds of milk for total production, fluid milk sales and milk manufactured.

The average farm value per hundred pounds of milk for all milk produced more than doubled during the period 1939 to 1943, while the value of milk used for manufacturing purposes in factories increased from 77 cents per hundred pounds in 1939 to $1.58 per hundred pounds in 1943. Returns to farmers for milk sold for fluid consumption increased from $1.50 per 100 pounds in 1939 to $2.28 per 100 pounds in 1943. In all cases, these returns include all dominion and provincial subsidies on fluid milk, cheese, butterfat and concentrated milk.

TABLE 4.—RETURNS TO FARMERS PER HUNDRED POUNDS OF MILK 1939–43 (¹)

Year	Total milk production	Used for manufacturing in factories	Fluid sales
	$	$	$
1939	0·90	0·77	1·50
1940	1·01	0·86	1·63
1941	1·23	1·10	1·85
1942	1·66	1·46	2·18
1943	1·82	1·58	2·28
Per cent increase 1943–39	+102·2	+105·2	+52·0

(¹) Adapted from Canada Year Books 1942 and 1943–44, Dominion Bureau of Statistics.

Butter Price.—The price of creamery butter (No. 1, Montreal, pasteurized, wholesale jobbing price) for the year 1939 averaged 23·8 cents per pound and increased in 1940 to 26·4 cents and in 1941 to 33·7 cents. Since the

Table 5.—Subsidies Payable on Dairy Products

Subsidy period	Rate of subsidy	Paid under direction of	Comments
Fluid Milk—			
Dec. 22/41–April 30/42	30c. per 100 lbs	WPTB (1)	Payable in areas where no price increase had taken place since August 1941.
Sept. 1/42–April 30/43	25c per 100 lbs	WPTB	In areas specified by WPTB and dependent on fixed minimum producer prices paid by distributors.
May 1/43–Sept. 30/44	25c. per 100 lbs	AFB (2)	In areas specified by AFB.
Oct. 1/43–April 30/44	25c. per 100 lbs., or 55c. per 100 lbs	AFB	In areas specified by AFB.
May 1/44–Sept. 30/44	25c. per 100 lbs., or 35c. per 100 lbs	AFB	In areas specified by AFB.
Oct. 1/44–April 30/45	25c. per 100 lbs., or 55c. per 100 lbs	AFB	In areas specified by AFB.
Creamery Butter—			
July 6/42–Dec. 20/42	6c. per lb. bf	WPTB	
Dec. 21/42–April 30/43	10c. per lb. bf	WPTB	Seasonal increase in wholesale prices cancelled.
May 1/43–Dec. 31/43	8c. per lb. bf	AFB	If creamery butter used for industrial purposes the subsidy is to be refunded to the Government.
Jan. 1/44–April 30/44	10c. per lb bf	AFB	
May 1/44–April 30/45	10c. per lb. bf	AFB	
Cheddar Cheese—			
Oct. 1/43—April 30/44	30c. per 100 lbs. of milk.	AFB	In addition Dominion bonuses are paid on high quality cheese.*
May 1/44–April 30/45	20c. per 100 lbs. of milk.	AFB	Ontario and Quebec also pay provincial bonuses.
Concentrated Milk Products—			
Dec. 22/41–April 30/42.	40c. per 100 lbs. of milk.	WPTB	
Mar. 1/43–April 30/43	25c. per 100 lbs. of milk.	AFB	On milk used in manufacture of whole milk products.
Oct. 1/43–April 30/44	30c. per 100 lbs. of milk.	AFB	On milk used in the manufacture of whole milk products, and skim milk products provided no other subsidy has been paid on milk.
May 1/44–Sept. 30/44†.	15c. per 100 lbs. of milk.	AFB	
Oct. 7/44–Apr. 30/45†.	30c. per 100 lbs. of milk.	AFB	

[1] Consumer subsidy of 2 cents per quart was announced in December, 1942, which meant a reduction in price of 2 cents per quart on all fluid milk sold to consumers either at retail or wholesale. This subsidy does not mean an increase to producers but is paid under authority of the Wartime Prices and Trade Board.

(2) Wartime Prices and Trade Board. (3) Agricultural Food Board.

* Dominion bonus on quality cheese—2c. per lb. on 94 score and 1c. per lb. on 93 score.

† A subsidy equivalent to the concentrated milk subsidy is being paid on milk used in the production of lactose (milk sugar) for period April 1, 1944 to April 30, 1945.

establishment of ceiling prices on butter, this average yearly price has remained fairly constant and in 1942 and 1943 averaged 35·1 and 34·5 cents per pound, respectively. At the same time there is a floor price on butter as the Dairy Products Board has been authorized to purchase butter at specified minimum prices. In May, 1943, this Board was given authority to purchase butter on a basis which is adjusted monthly with price in Ontario, Quebec and British Columbia starting with 32 cents per pound in May and rising $\frac{3}{8}$ cents per month until December and remaining there until April, 1944, when it again drops to 32 cents per pound. Prices in other provinces are somewhat different but the monthly changes are the same.

Cheese Price.—The cheddar cheese price (No. 1, Western Montreal, wholesale jobbing price) is determined to a large extent by the British Contract price and in 1939 averaged 12·7 cents per pound, in 1940 averaged 15·1 cents per pound and in 1941 averaged 15·2 cents per pound. The average price for No. 1 cheese increased in 1942 to 21·5 cents, while the average price for calendar year 1943 was somewhat higher because of the change in the delivery point for overseas shipment and averaged 21·7 cents per pound.

Functions of Wartime Boards Related to Dairy Products

Dairy Products Board.—Shortly after the start of the war the government departments concerned recognized that steps would have to be taken if production was to be maintained, the export requirements of the United Kingdom met and the demand for the domestic market ensured. On May 23, 1940, the government passed an Order in Council setting up the Dairy Products Board under the Chairmanship of J. F. Singleton, Associate Director, Marketing Service and with John Freeman and Joseph Desmarais of Montreal as members. H. A. Derby, Dairy Products Division, is the Board's Secretary.

The Dairy Products Board has the power to regulate the export of dairy products to the United Kingdom pursuant to agreements made between the Governments of Canada and the United Kingdom and to that end to arrange with or require any manufacturer or exporter to ship or deliver on board such dairy products of the quality and quantity specified for shipment to the United Kingdom; to require any manufacturer or exporter to store for future delivery to the United Kingdom Ministry of Food such dairy products as the Board unanimously determine to be necessary to satisfy future requirements; to determine the price which shall be paid to manufacturers or exporters for dairy products to be delivered in accordance with requirements of the Board; to inspect dairy products to be delivered pursuant to the requirements of the Board and to reject any such products that do not conform to the required standards; to require any manufacturer or exporter to give priority to the delivery of dairy products to be delivered pursuant to a requirement of the Board; to fix the minimum prices to be paid by manufacturers or exporters of dairy products. Other powers were also granted to the Board under the original Order in Council which ensure proper functioning of the Board.

Wartime Prices and Trade Board.—The Wartime Prices and Trade Board under the Minister of Finance is responsible for all matters relating to price control and civilian supply. It was given authority under the Maximum Price Regulations which state that the highest price which any person may sell any goods or services is the highest lawful price at which he sold these goods or services in what is known as the "basic period" September 15 to October 11, 1941, unless the Wartime Prices and Trade Board has ordered otherwise. Applied specifically to dairy products, it meant that the Wartime Prices and Trade Board fixed the price for all dairy products including fluid milk, butter, cheese and concentrated milk and at that price for which they were sold during the basic period, unless otherwise ordered. The only exemptions for dairy products were on cheese, butter, or other dairy products sold for export or to the Department of Munitions and Supply.

The Wartime Prices and Trade Board was given authority to set maximum, minimum or specific prices for all dairy products and to ration or otherwise control their distribution. It could also control the quantity, quality and type of these products and the method of producing, selling or distributing them. As the above regulations overlapped the policies and functions of the Department of Agriculture, a clarification of the order on February 9, 1943, was given by the Minister of Finance who outlined the related functions of the Wartime Prices and Trade Board and the Department of Agriculture. After March 1, 1943, the Department of Agriculture was to have the responsibility of ensuring adequate production of all food including dairy products and to ensure their supply to the armed forces and other priority users, as well as to domestic consumers. The responsibility for presenting to Cabinet Council recommendations for subsidies to be paid to primary producers in order to ensure production was transferred to the Agricultural Food Board, set up under the Department of Agriculture.

The Wartime Prices and Trade Board is charged with the duty of defining and estimating the overall need for food in consultation with other departments. The Chairman of the Wartime Prices and Trade Board is Donald Gordon. Policy related to dairy products is under K. W. Taylor, Foods Co-ordinator, assisted by K. H. Olive, Administrator of Dairy Products and J. P. Nadeau, Assistant Deputy Administrator of Dairy Products.

Agricultural Food Board.—The Agricultural Food Board was established on March 1, 1943, with the duty and responsibility, subject to approval of the Minister of Agriculture and in co-operation with the Agricultural Supplies Board, to develop and direct the policies of the Department of Agriculture for the wartime production of food and to co-ordinate the activities of all commodity boards established under the Department of Agriculture.

In addition, this Board is required to direct the diversion of food produced in Canada, to confer with the Wartime Prices and Trade Board on price adjustments and subsidies, and to make recommendations to the Minister. The duties of the Agricultural Food Board have been linked to a large extent with the production of dairy products and the chairman of the Dairy Products Board is ex-officio a member of the Food Board. The Agricultural Food Board is under the chairmanship of the Deputy Minister of Agriculture, G. S. H. Barton and has as its members: A. M. Shaw, Director, Marketing Service; R. S. Hamer, Director of Production Service; J. F. Booth, Associate Director, Marketing Service; while J. F. Singleton is an ex-officio member of the Board and acts in this capacity when matters pertaining to milk or dairy products are under consideration. L. W. Pearsall, Secretary-Manager of the Meat Board also acts as a member of the Board when meat products are under discussion. A. E. Richards, Economics Division, is Secretary of the Board.

As indicated, payment of subsidies on milk and dairy products was first under the jurisdiction of the Wartime Prices and Trade Board but is now under the Agricultural Food Board. A summary of all subsidies paid on dairy products since the start of subsidy payments is shown in table 5. These subsidies have been adjusted from time to time to ensure adequate production of milk and to meet the increased demand for butter and fluid milk due to the increased purchasing power of consumers.

Contracts with British Ministry of Food

Cheese and evaporated milk are two main dairy products that are exported. Since the start of the war, contracts between the British Ministry of Food and the Canadian Government have been signed specifying the quantity to be provided each year. These contracts are implemented on behalf of the Canadian Government by the Dairy Products Board.

The first contract for cheese with the British Ministry of Food called for a total of 79,400 pounds with the production season ending November, 1940, and was later extended until the new agreement was effected on April 1, 1941. Since then subsequent agreements have been signed which called for export to the United Kingdom for the year ending March 31, 1942, of 112 million pounds; 1943, of 125 million pounds, and the fourth contract of 150 million pounds ending March 31, 1944. While the amount of cheese exported in the fourth contract did not quite reach the total of 150 million pounds, exports of urgently needed butter to the extent of 7 million pounds in the fall of 1943 helped to make up for the shortage in the cheese contract. Under the terms of the new agreement, Canada has agreed to provide the United Kingdom with 125 million pounds of cheese in each of the years ending March 31, 1945 and March 31, 1946.

Contracts for evaporated milk have been in effect since July, 1940. Under the terms of the contracts for 1940, 751,362 cases of evaporated milk were exported to the United Kingdom during the period July 1, 1940 to March 31, 1941. Subsequently contracts for each year were signed and exports of evaporated milk in 1940-41 and 1941-42 totalled 658,000 cases and 668,000 cases, respectively. Under the terms of the contract which expired March 31, 1944, exports were reduced to slightly more than 300,000 cases. The contract which ends March 31, 1945 also provides for the export of 300,000 cases.

Dairy Program for 1944

At the Dominion-Provincial Agricultural Conference held in Ottawa in December, 1943, objectives for Canadian dairy products were set up for 1944.

On the basis of production in the first half of 1944, it would now seem that while the objectives for individual products might be somewhat changed, the total production of milk for the entire year will be at least as high as in 1943, the highest on record.

Weather conditions for dairy production are reported favourable in both Eastern and Western Canada. Production in May and June was good with the flush season for milk production earlier than usual. However, it is anticipated that the milk supply may fall off much earlier in the fall than usual, so that total production may not be very different from that of 1943.

On the basis of present trends, it is anticipated that creamery butter production will not reach the objective of 303·8 million pounds set at the time of the Dominion-Provincial Conference; but on the other hand, cheddar cheese production will show a marked increase and production for the year is likely to exceed 175 million pounds. Fluid milk sales in Canada are higher in 1944 than in 1943 but recent regulations of the Wartime Prices and Trade Board limiting the sale of "special milk" will tend to lessen the increase in fluid milk consumption.

The Agricultural Food Board is continuing to stabilize the dairy industry by requiring shippers wishing to change from one market outlet to another to obtain a permit before transferring.

The dairy farmers of Canada were assured early in 1944 that subsidies on dairy products would continue at least until April 30, 1945, and with this as an incentive are doing all in their power to maintain peak production.

CHANGES IN THE EXTENT AND EFFECT OF MECHANIZATION ON SASKATCHEWAN FARMS

R. A. Stutt

Progress in the agricultural development of Saskatchewan, as in all small grain producing areas, has been affected greatly by technical improvements, the most important of which is probably the adoption of mechanical power. Closely associated with this mechanical development have been the changes in farm equipment. Newer and improved kinds of farm machinery and equipment have been brought into use, and they have radically changed farm organization and the cultural and cropping practices of this Province.

In an effort to show the changes and extent of mechanization on Saskatchewan farms, a comparison was made of the kinds and numbers of machines and equipment in use in the 1926-1932 period and the 1939-1941 period. This comparison was made possible for these two periods of time by utilizing information contained in the Farm Business records, the surveys of which were conducted by the Department of Farm Management in the first period and by the Economics Division in co-operation with the Department of

Farm Management in the latter period. Comparable studies were available for eight areas which were similar in physical characteristics and type of farming. Five of these areas were in the Dark Brown and Brown soil zones and three in the Black or Parkland soil zone. The following table gives the district, number of records and financial year in which each study was made. Each district in the 1926-32 period is placed opposite the district with which it is being compared in the 1939-1941 period.

TABLE 1.—DISTRICT, NUMBERS OF FARM SURVEY RECORDS AND FINANCIAL YEAR OF STUDY FOR EACH PERIOD

District	1926–32		District	1939–41	
	No. of farms	Financial year of study		No. of farms	Financial year of study
Parkland Area—			*Parkland Area—*		
Alameda	100	1926–27	Alameda	75	1940–41
Melfort	106	1925–26	Melfort	103	1939–40
Turtleford	182	1929–30	Lashburn	133	1938–39
Prairie Area—			*Prairie Area—*		
Belbeck	120	1925–26	Wilcox	106	1939–40
Gull Lake	95	1927–28	Pittville	116	1938–39
Kindersley	217	1929–30	Lacadena	123	1939–40
Davidson	125	1930–31	Blucher-Colonsay	146	1940–41
Wellington	78	1931–32	Weyburn	53	1940–41

The degree of mechanization which has occurred in Saskatchewan in this length of time has been quite pronounced. In spite of many adverse conditions through crop failures and wide fluctuation in farm income, many changes have been brought into effect.

Special Equipment.—Machines included under this grouping are considered the most essential and important found on farms under present day farming methods. Table 2 gives the comparison of the numbers of special equipment on Saskatchewan farms in the two periods.

TABLE 2.—COMPARISON OF NUMBERS OF SPECIAL EQUIPMENT ON SASKATCHEWAN FARMS IN 1926–32 AND 1939–41

Item	1926–32		1939–41	
	Total No. of each item	No. per 100 farms	Total No. of each item	No. per 100 farms
Number of farms	1,023		855	
Tractors	492	48	640	75
Combines	59	6	236	28
Separators	343	34	200	23
Automobiles	809	79	632	74
Trucks	89	9	268	31
Swathers	13	1	40	5

It will be noted that numbers of all types of special equipment per 100 farms have increased with the exception of separators and automobiles. The number of tractors per 100 farms has nearly doubled, the number of combines per 100 farms has increased over four and one-half times, swathers about five times and trucks have increased from 9 per 100 farms to 31 per 100 farms. This is the general picture for the Province. These changes in use have resulted from the attempts of farmers to improve cultural practices and also to increase the efficiency of operations and to reduce costs of operation.

All districts except the Wellington-Weyburn area showed an increase in the number of tractors. The changes in the number of tractors per 100 farms between these periods ranged from a decrease of 14·7 per cent in the exception already noted to an increase of 166·4 per cent on the Regina plains as indicated by the Belbeck and Wilcox studies. The Wellington-Weyburn area is typical of many drought-stricken areas in the southern portion of the Province where it was impossible to make replacements of relatively high-priced machines. At Melfort, in the Parkland region, three out of four farmers reported tractors in 1939 as contrasted to two out of four in the 1926-1932 period.

Combine harvesters increased in all areas except Wellington-Weyburn and large increases were reported for other prairie farms as contrasted to those in the parkland belt. At Wilcox, 66 out of 100 farms reported combines in 1939-1941 as contrasted with none in 1926. Melfort reported seven combines per 100 farms in 1939-1941. Areas of heavier textured soils on the prairies reported greater numbers of all harvesting equipment other than threshing machines than for the medium and light textured soils. The numbers of threshing machines showed some decrease in all areas.

With respect to automobiles, the numbers have remained approximately the same, although the average age has increased considerably. In a comparative study of the same twenty farms in the Alameda district in 1926 and 1940, the average age of automobiles was 6 and 12 years, respectively.

The number of trucks has increased substantially. About 50 per cent of all farmers in the Wilcox area reported trucks in 1939 as was the case in the Rural Municipality of Pittville No. 169 and at Lacadena. This is in direct contrast to approximately 10 to 15 per cent in 1926-1932. At Melfort, which is one of the superior areas in the parkland region, 24 per cent of all farms reported trucks in 1940 and only 3 per cent in 1926.

The net result of these changes shows a gradual substitution of tractor power for horses, the switch from the binder and threshing method to the combine-harvester, the increase in trucks and the partial substitution of trucks for automobiles as a mode of travel.

The numbers of special equipment found on Saskatchewan farms according to the grade of land found in the specific areas is indicated by the following table. This information relates to the Cory-Asquith-Langham area adjacent to Saskatoon for the 1942-1943 crop year.

TABLE 3.—NUMBERS OF SPECIAL EQUIPMENT PER 100 FARMS ACCORDING TO LAND CLASS CORY-ASQUITH-LANGHAM AREA, 1943

Land class	I	II	III	IV
Number of farms	140	172	149	31
		Number per 100 farms		
Tractors	46·4	50·6	74·5	80·6
Combines	4·3	7·6	26·2	38·7
Separators	17·1	21·5	31·5	25·8
Automobiles	47·6	55·2	68·5	67·7
Trucks	22·1	27·3	36·9	48·4
One-way discs	20·7	42·4	45·0	58·1
Milking machines	8·6	9·3	8·0	12·9

As expected, the degree of mechanization is greatest on the superior grades of land (Land Classes III and IV), there being a definite relationship of numbers of special equipment with predominant land class.

In this area the extent of mechanization varies greatly, as in all other areas, with the type of farm. As shown in table 4, the crop and fluid milk shippers in the Saskatoon shed kept more of the special items of equipment as compared to live stock and general or mixed farms. In general, the crop and fluid milk shipping farms are relatively large farms as measured in terms of acres of cropland.

Table 4.—Numbers of Special Equipment per 100 Farms According to Type of Farm, Cory-Asquith-Langham Area, 1943

—	Crop	Live stock	General or mixed	Fluid milk shippers	All types
Number of farms	157	86	125	124	492
Tractors	56·7	37·2	52·8	81·4	58·5
Combines	22·3	7·0	12·0	11·3	14·2
Separators	19·7	17·4	19·2	37·1	23·6
Automobiles	50·3	45·3	57·6	76·6	57·9
Trucks	42·0	25·6	16·0	32·3	30·1
One-way discs	36·9	18·6	40·8	50·0	38·0
Milking machines	....	4·6	....	16·1	8·9

The increase in the use of tractor power has brought about changes in the types of machines used for cultural and harvesting purposes. In this connection, the results of the comparative study of these machines between the two periods are of interest. Machines of larger sizes, drawn at greater than horse speed, have made it possible to perform field operations when they are most effective.

General Equipment.—The most significant increase in the use of any one machine is noted in the wide adoption of the one-way disc with seeder attachment, or the tiller combine. In 1926-1932 (see table 5), only 2 out of every 100 farms reported one-way discs, whereas in 1939-1941 more than one-third of the farms reported this implement. The increase in numbers of this machine is reflected in the decreased use of the other kinds of field equipment.

Table 5.—Comparison of Numbers of Farm Implements on Saskatchewan Farms in 1926–32 and in 1939–41

Item	1926–32		1939–41	
	No. per 100 farms	No. per 100 acres of cropland	No. per 100 farms	No. per 100 acres of cropland
Ploughs	222	0·52	168	0·38
One-way discs	2	....	37	0·09
Disc-harrows	118	0·28	92	0·21
Drills	120	0·28	102	0·23
Packers	31	0·07	39	0·09
Rod weeders	6	0·01	25	0·06
Cultivators	72	0·16	55	0·13
Binders	228	0·53	114	0·26
Wagons	346	0·82	279	0·64
Number of farms	....	1,023	....	855
Acres of cropland per farm	....	427	....	437

The number of ploughs per 100 farms has decreased nearly 25 per cent. The actual decrease in the use of ploughs is probably not reflected in the number reported. Nearly all farms reported some ploughs on the farm. However, many of these ploughs were being used only to a limited extent, or not at all, as in many cases new cultural practices had replaced ploughing as a part of the farm operations.

The decrease in the numbers of disc harrows can be attributed to the increased use of the one-way disc. Another factor has been the use of larger sized disc harrows, which in all probability are tractor drawn.

To some extent, also, the decrease of about 15 per cent in the use of seed drills can be accounted for by the increased use of the tiller combine. In part, the decrease can be attributed to the adoption of seed drills of greater width.

In the stone free areas and in the large wheat producing districts, the use of the rod weeder has increased. This implement is of particular use for surface cultivation of summer-fallow land in order to control weed growth. It operates satisfactorily on land having a trash cover and does not pulverize the soil.

The reduction in the use of binders, as indicated by the numbers per 100 farms, is greater than these figures indicate. On many farms binders are used only to a limited extent for the harvesting of feed crops.

Throughout the Province as a whole, the numbers of cultivators have been reduced about 24 per cent in this period. Again this decrease has been brought about by the replacement of these implements by the one-way disc. The only district showing an increase in the use of cultivators was Melfort. It will be indicated later that this is due to the increase in summer-fallow for the purpose of weed control.

Effects of Mechanization.—It has been noted that changes in mechanization of farms have varied greatly between districts, particularly between those of the prairie area and of the parkland areas. Due to differences in climatic factors and physical features, certain machines are suited to specific areas and fit in with the cropping and cultural practices of the region. The case of the combine harvester will illustrate the point. The climatic conditions and relatively large and open fields on the prairies favour the use of this machine, whereas, this is not necessarily true in the parkland areas. However, due to the efficient nature of this machine, and as earlier maturing varieties of grain and more efficient machines are developed, it is to be expected that the use of combines in the parkland areas will increase.

The greatest factor affecting the change in types of power and equipment is size of farm. The use of larger sized units and machines requiring less power to operate has increased the efficiency of labour and of crop and live stock enterprises.

Associated with the change in size of farm in prairie areas has been certain changes in utilization of the cropland. In the interval between these two periods there was an increase in the proportion of the cropland seeded to wheat in the prairie areas, with the exception of the Wellington-Weyburn area. On the Regina plains, there was an increase of 19·2 per cent in the proportion seeded to wheat as indicated by the Belbeck study of 1926 and the Wilcox study in 1940. At Lacadena the increase was 17·4 per cent over the amount reported in the Kindersley study in the earlier period. At Pittville the increase was 3·0 per cent over the Gull Lake area in 1928, and at Blucher-Colonsay, the increase was 5·8 per cent over the Davidson area in the earlier period. In part, the increase was accounted for by a decrease in the summer-fallow acreage, but for the most part it resulted from a decrease in the acreage seeded to coarse grains.

In the parkland areas, there was a decrease in the proportion of cropland devoted to wheat, as was the case with oats. The proportion devoted to barley increased somewhat, but the main increase was found in the summer-fallow area. It would appear that this change in cultural practice has been for the purpose of weed control.

The wider use of tractors on the prairies as a source of power, accompanied with a decrease in the numbers of work horses, has released the acreage usually needed to produce fodder and feed for horse power to the production of wheat.

All these changes in choice and numbers of machinery and equipment have had an important effect on farm employment and production. It has increased the productive capacity and efficiency of farm labour as well as improving the quality and timeliness of farm work.

A study of the total labour force on these farms for the two periods indicated a substantial reduction. In the Wilcox district in 1940, the average total labour was 18·1 months, as compared to 25·9 months in the Belbeck district in 1926, a decrease of 30 per cent. The average acreage of cropland in these two districts was 653 and 453 acres respectively, which was an increase of about 50 per cent. Expressed in a somewhat different manner, the number of months per 100 acres of cropland decreased from 5·7 to 2·8 months between the time of the survey periods, a decrease of approximately 51 per cent. Smaller decreases due mainly to lower rates of mechanization were found in other areas. The greatest decrease was in the amounts of hired labour.

The labour requirements of farms operated with different types of power are of interest. Size of farm, as measured by acres of cropland per farm, averaged 305 for horse operated farms and 493 for tractor operated farms in the 1926-1932 period. In the latter period (1939-1941), horse operated farms averaged 264 acres of cropland and tractor operated farms were 545. The man equivalents per farm in the 1926-1932 period were 1·6, as compared with 1·2 for tractor operated farms. In the 1939-1941 period, man equivalents per farm were 1·4 for horse operated farms and also 1·4 for tractor operated farms.

The average efficiency of labour, as expressed by acres of cropland handled per man equivalent, was 191 for the horse operated farms, as compared with 411 for the tractor operated farms in the earlier period. In the latter period, horse operated farms averaged 188 acres of cropland per man equivalent, as compared with 389 for tractor operated farms. Tractors of smaller size and higher efficiency than were found in the 1926-1932 period, have displaced the use of horses for power on many of the smaller sized farms. This fact accounts for the small reduction of acres of cropland per man equivalent for the 1939-1941 period, as compared with the earlier period for the tractor operated farms.

The noticeable increase in cropland handled per man when the switch is made from horse to tractor power is significant. As size of farm is such an important factor in increasing the chances of farm success in Western Canada, the importance of type of power is readily recognized. When the change is made from the use of horse power to tractor power, considerably greater acreages of cropland can be handled per man or there are substantial amounts of labour available for other farm enterprises or for employment in places other than on the farm.

THE U.S.S.R. AS A POTENTIAL LIVE STOCK EXPORTER

LaDislas Lorinez

As early as 1937, a "Political and Economic Planning Report on International Trade" urged British exporters to develop away from staple exports towards "newer and more specialized types of goods in which skill and technical efficiency count for more." Such a trend would improve the "terms of trade" which must be low when exports largely consist of raw materials.

Canada has made remarkable progress in this respect under the stimulus of wartime exigencies. An increasingly large portion of the grain crops grown on the Prairies is being converted into live stock and live-stock products. Exports of hog products to the United Kingdom have been heavy for several years now; quite recently large commitments were announced for beef exports to the same destination. At the same time Canadian farmers are acquiring more skill in producing grades of carcasses and bacon that are acceptable in British markets. If improvement continues in this direction and no artificial barriers are placed in the way of shipments from Canada this important trade may continue after the war.

It is then of considerable importance to determine as far as possible the status of live-stock industry in other countries. This is the first of a series of reports on this subject. It deals with the U.S.S.R. not because of their actual performance in the field of live-stock exports, but rather because of their very great potentiality. While much of what follows must of necessity be speculative, it is largely based on a recent report, published in Russian by the U.S.S.R. Commissariat of the People of Agriculture that gives chapter and verse of Soviet collective live-stock industry.

The Live Stock Industry in U.S.S.R.

The Red armies' magnificent accomplishments on battlefields have changed public opinion about Russia and Russians almost overnight. While before this war, it was fashion to discount those ambitious goals set for repeated five-year plans, the present trend is exactly to the contrary.

For weighing the competitive possibilities of the U.S.S.R. in the field of live stock and its products in a dispassionate manner, the following points should be considered:—

1. Present status of live-stock production and past performances;
2. Present and possible future domestic requirements;
3. Present skill of the population for producing quality and future possibilities for development.

Status of Live-stock Production.—Live-stock production is largely in the hands of collective and State farms. In 1938 as high as 93·5 per cent of all peasant households in the U.S.S.R. were included in collective farms. Thus, live stock on the remaining 6·5 per cent of holdings may be safely neglected. Present information covering collective and State farms will be applied, therefore, to the entirety of Soviet economy.

Cattle.—In 1916 according to the International Institute of Agriculture, the Russian Empire reported 60,280,000 head of cattle; by 1926 this number increased to 63,270,000; a drastic decline to 52,581,000 in 1930, and 49,255,600 in 1935 ensued, but by 1938 the number of cattle had risen to 63,200,000 head. It took twelve years of effort to restore cattle numbers to their 1926 level, which in itself, was scarcely higher than the 1916 number. This indicates that it may take considerable time to restore losses incurred during the present war.

Recent figures indicate an 11 per cent increase in cattle numbers on collective and state farms between January 1, 1942 and January 1, 1943 in unoccupied parts of the U.S.S.R. But, in the occupied zones, only a small portion of the pre-war numbers of live stock remained on farms at the time of liberation. In many localities, only about 10 to 15 per cent of pre-war numbers were left and it must not be forgotten that the most productive regions of the Union were the ones occupied by the enemy.

Hogs.—Better results were obtained with hogs. The 1916 Census showed 20,900,000 head; in 1926 there was practically no change at 21,027,000, then an abrupt decrease to 12,183,000 in 1930, was followed by complete recovery to 22,550,000 head in 1935 and an increase to 30,600,000 by 1938.

However, what has been said about wartime devastations above applies to pigs as well. Besides, a two per cent decrease in hog numbers occurred between January 1, 1942 and January 1, 1943 on collective and state farms located in free territory.

Domestic Requirements.—The latest comparable figures are for 1938.

Cattle.—In 1938, there was one head of cattle for every 2·7 inhabitants of the U.S.S.R. compared with one for every 2·0 persons in the United States, 1·4 in Canada and 1·2 in Denmark. Inadequate as this basis of comparison may be, it shows that considerable expansion may still take place in the U.S.S.R. before there are any exportable surpluses. Of course, cattle in the United States, Canada and Denmark have yielded considerable export surpluses at the above ratios, whereas the fairly comparable ratio has not resulted in any exports from the U.S.S.R. This situation is due to the low productivity of Soviet live stock and will be dealt with later.

Even if domestic use of cattle products is not raised above 1938 levels, it may take a good many years to make good losses suffered by the war. But if it were desired to attain the Canadian ratio of one head of cattle per 1·4 inhabitants, i.e. a 110 per cent increase, it would take nine years to accomplish this result at the rate of an 11 per cent annual increase (i.e. the rate of increase in 1942). In addition, the productivity and quality of Soviet cattle would have to improve radically.

Hogs.—In 1938, there was one pig in the U.S.S.R. for every 5·6 inhabitants, compared with one for 2·7 in the United States, one for 2·4 in Canada and one for 1·3 in Denmark. This unfavourable ratio is partly explained by the existence of large Moslem populations in the Asiatic republics. These nomadic people do not eat pork and largely subsist on sheep milk, goat milk and mutton. Thus, there is one sheep or goat for every 1·7 Soviet inhabitants compared with 2·4 in the United States, 3·3 in Canada and 20·2 in Denmark. These proportions clearly reflect the extensive character of Soviet agriculture in contrast with extremely intensive farming in Denmark.

To reach the 1938 status of Canada, Soviet hog numbers would need to be increased about 100 per cent in quantity and very considerably in quality and uniformity. Instead of an increase, there was a decrease of two per cent in hog numbers during 1942, despite previous plans that provided for an increase. The 1943 plan again prescribes an increase of 16·4 per cent. There is now little reason to believe that it materialized. But even if it did and the trend continued at the same rate, almost eight years would be required to bring the Soviet ratio of hogs per inhabitant up to Canadian levels, in sections not occupied by the enemy. However, most of the pigs were located in occupied territory and it may take as long as ten years to re-establish the hog population of 1938 in these sections.

Explaining the reasons for the 1943 plan as prescribed by Soviet authorities for collective and state farms, the following extract throws an interesting light on what is likely to happen in the near future:—

> A serious obstacle that impedes the acceleration of the increase in cattle numbers is that a high degree of sterility has been observed in the sows bred on many collective farms. As a consequence, these farms fail from year to year to fulfil their quotas for offspring. . . . The average number of pigs saved was only five per sow in 1942 in the Kirov and Vologda districts. . . . Some collective farms have suffered considerable losses from the poor organization of weaning and feeding practices.
>
> Many Soviet —, Party —, and collective organizations are not giving enough help to collective farmers in respect to selection and maintenance of live stock, as a result of which cattle numbers decreased on these collective farms in recent years, adversely affecting the personal quota for collective farmers' use.
>
> The unsatisfactory work of a "large number" of state farms in the field of live-stock husbandry is stressed. They did not carry out their part in the development plan, nor did they deliver their 1942 quotas and permitted the loss of young stock and sterility to increase.

The 1943 plan proposes remedies for this situation. So have plans for previous years. They were followed by positive results in some cases and by negative ones in others.

The Quality Factor.—In order to stand on an equal footing with live stock and live-stock product exporting countries whose reputation has been long established on world markets, dependable supply, uniformity, quality and adequate transportation facilities are indispensable requisites.

Replenishment of war-ravaged herds is essential for the development of a dependable supply. This will take years to accomplish. The establishment of safe, reliable and fast refrigerated transports from the Soviets to western

European capitals will have to wait until transportation in intervening countries is re-organized, although steamships might be used for shipments to such seaboard cities as London, Antwerp, Rotterdam, Barcelona, Marseilles and most Greek, Italian and Norwegian cities.

It is especially in respect to quality and uniformity that almost insurmountable difficulties will face the Soviet Union, if it should attempt to enter world competition prematurely. The dangers of such competition to quality producing export-countries are obvious. An impoverished Europe, with the probable exception of the United Kingdom may not be too particular about quality. If long term loans are denied to devastated European importing nations, they may prefer to buy cheap live-stock products even though they may be of lower quality than is available elsewhere. However, it is doubtful that the Soviets will press the sale of low quality products. When the U.S.S.R. unloaded grain on European markets in some years between the two World Wars, the international situation was at the root of the evil. Machines and tools were desperately needed and could not be obtained except for gold. One way of obtaining the necessary credits for this purpose was to take the bread away from underfed populations and undersell other exporters on European markets. With a better relationship existing between the Soviets and other important countries, including those with most financial power, it is unlikely that past experiences will re-occur.

How soon will the U.S.S.R. then be able to export live-stock products of good quality? Certain provisions of the 1943 plan give some indication in this respect. Section 13 of Part I provides that:—

> It is prohibited to press high-grade stock held by breeding farms into military uses, nor shall collective live stock be used by the military, except in special cases.

This "use by the army" means pulling loads and carts with milk cows.

Further: Sections 16-18, Part I:—

> In order to ensure healthy offspring and to avoid abortion, rules concerning the feeding of pregnant animals shall be evolved; they shall be fed better and more varied roughage and succulent feed (better hay, spring straw, mangels, better ensilage), as well as the indispensable quantity of concentrates and mineral supplements (such as charcoal, bonemeal etc.) so that breeding stock should be at least in medium finish at the time of parturition.

Here, we may remark that the English word "concentrate" is used in the original Russian text. Concentrates were unknown to Russians not very many years ago.

Furthermore:—

> To ensure that young stock is more properly raised, collective farms are required to secure better, drier and lighter housing for calves, sows and ewes with their litter, and to provide young stock with good hay and indispensable concentrates.

It seems that root crops are not among the feeds regularly provided for live stock. It is necessary to pay heavy premiums to certain collective farmers if they are to eke out these feeds for the live stock. Section 8, Part II of the Plan reads:—

> It is recommended that collective farms should set aside three to five hectares (about 7 to 12 acres) in the vicinity of their live-stock farms for raising potatoes and other root crops for pigs. "Live stock brigades" of these farms shall be entrusted with this work and members of these brigades shall receive one-third of the yield as premium upon completion of the plan.

Poultry.—The quality of poultry may be judged from Section 3, Part III of the Plan which requires collective farms to deliver any kind of eggs in staggering numbers to Government hatcheries by July 15, 1943, for hatching and returning chicks to them. The late date of hatching suggests that chickens of slow development are used, which subsist on whatever feed they can scrape up on stubbles, then go into molt and start laying only next summer. This is a rather general condition in Eastern and Southeastern Europe. But taking eggs for hatching from community flocks, instead of from breeding stock, certainly indicates that numbers, not quality, is the present aim. This is, also, borne out by the Plan, which provides for a 112 per cent increase in poultry numbers by January 1, 1944.

Conclusions.—The above information seems to indicate that the Soviet Union will not ship quality products of live stock to world markets for a good many years to come, probably for a decade or even longer.

At the same time the very excellent work performed by Soviet zootechnicians in an intelligent and effective effort to modernize live-stock breeding in the U.S.S.R. is bound to make itself felt on World markets, once problems of providing quantity and replenishing war depleted stocks are overcome. In the meantime the Soviets may be more interested in imports of valuable breeding animals than in trying to compete with any country. The Plan mentions that 2,800 bulls must be provided during the second and third quarter of 1943 for as few as ten liberated districts. In this important trade with high-grade reproducers there may be a very definite place for Canadian breeders.

PAYING OFF INDEBTEDNESS ON IRRIGATED LAND

J. L. Anderson

Reduction of Land Indebtedness in Irrigation Districts in Alberta.—There have been periods in the past when irrigation farmers, in common with many other farmers in Western Canada, were not able to meet their contracted financial obligations. However, the default of farmers in irrigation districts attracted special attention. This may have been due to a number of factors, including (1) the public and semi-public investment in irrigation development; (2) the relatively high debt per acre; (3) the concentration of indebtedness within relatively small areas; (4) the comparatively large number of people affected in a given area; (5) the more general occurrence of default in the irrigation areas; and (6) widespread skepticism as to the practicability of irrigation farming in Alberta.

The Eastern Irrigation District is the largest project, under single management in Southern Alberta. Irrigation works were constructed by the Canadian Pacific Railway, beginning in 1910 and colonization of the district was carried on simultaneously. In 1935 the Company transferred its entire interest in the project to the people of the District, through a board which was set up to administer the project. At this time new land contracts were issued, the purchase price being reduced to an amount which it was expected the farmers would be able to pay over a period of years. There was a blanket reduction in real estate indebtedness; but most of the farmers reassumed a considerable land debt.

Throughout the District soil and climatic conditions are quite similar. However, the whole project consists of a number of sub-districts, the distances between these being determined by the contours of the land and the ease with which water can be distributed. Although the type of farming varies somewhat between sub-districts there is no local market for intensive crops yielding a high value per acre, such as sugar beet or canning factory crops.

There are over 1,500 farms in all sub-districts in the Eastern Irrigation District. From a representative sample of farms it was found that there was a reduction in land indebtedness, or agreements of sale, of 30·2 per cent between

December 31, 1937, and December 31, 1943. The largest reduction occurred in 1943, when indebtedness was reduced by 15·2 per cent.

In the Taber District, where sugar beets and canning crops provide the major sources of farm income, the records of some 63 land contracts showed a reduction in indebtedness of approximately 58 per cent,[1] between 1937 and 1943. It is believed that the debt reduction on these contracts is representative of the District as a whole.

Table 2 provides a comparison of the reduction in indebtedness on agreements for sale in the Eastern and Taber Districts.

TABLE 2.—REDUCTION OF INDEBTEDNESS REPRESENTED BY AGREEMENTS OF SALE IN THE TABER AND EASTERN IRRIGATION DISTRICTS, BY YEARS

District	Number of contracts in sample	Amount owing December 31		Percentage of total reduction	Reduction in per cent of preceding year					
		1937	1943		1938	1939	1940	1941	1942	1943
	No.	$	$	%	%	%	%	%	%	%
Eastern Irrigation District............	230	209,396	146,234	30·2	5·9	3·4	1·7	2·0	6·0	15·2
Taber................	63	94,295	39,665	57·9	4·4	10·4	14·0	11·2	19·2	20·1

Reduction of Land Indebtedness in Type-of-Farming Areas in the Eastern Irrigation District.—The comparison between the Eastern and Taber Districts suggests a significant relation between type of farming and the rate of reduction in farm debts. As already indicated, the Eastern Irrigation District consists of a number of sub-districts in which soil and climate are similar. However, appreciable local differences in type of farming occur.

The sample of land contracts in the Eastern Irrigation District was selected by sub-districts to represent more or less distinct types of farming and at the same time to provide a cross-section of the entire District.[2] These type-of-farming areas will be referred to as: A, (Live Stock); B, (Mixed with emphasis on Vegetable Crops, Seed Production and Feeders); C, (Mixed General); D, (Grain). The reduction in amounts owing between 1938 and 1943 are shown in table 3.

TABLE 3.—REDUCTION OF INDEBTEDNESS REPRESENTED BY AGREEMENTS OF SALE IN THE EASTERN IRRIGATION DISTRICT BY AREAS AND YEARS

Area	Number of contracts in sample	Amount owing December 31		Percentage of total reduction	Reduction as per cent of amount owing, December 31, 1937					
		1937	1943		1938	1939	1940	1941	1942	1943
	No.	$	$	%	%	%	%	%	%	%
A........	58	47,912	28,995	39·5	3·9	4·3	5·1	5·6	8·3	19·8
B........	50	46,105	28,742	37·7	6·3	3·7	0·8	3·0	14·3	16·1
C........	67	64,034	50,300	21·4	6·1	2·1	0·4	0·0	0·9	13·4
D........	55	51,345	38,195	25·5	7·0	3·9	0·7	0·3	3·3	13·0

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[1] Special tabulation, Taber Irrigation District records, courtesy Secretary-Manager, Taber Irrigation District.

[2] For the purpose of studying the trend in land indebtedness the sampling was done by "ditch-rider districts". A ditch-rider district is an area served by one official whose duty it is to see that water is delivered to the farms under contract and to provide other services connected with water delivery. The ditch-rider district most representative of a type of farming was selected, and information on all land contracts in force as of December 31, 1937, was used in the calculation.

Reduction of debt in area A has progressed steadily since 1937, even during the years when payments could be deferred.[1] The total reduction of 39·5 per cent is substantially greater than the estimated provincial average of 30 per cent, and indicates the relative advantage of this type of farming over the past six years. The reduction of 37·7 per cent in Area B also exceeds the provincial average. However, the high percentage in 1942 (14·3 per cent) was largely due to four contracts where the farms had exceptionally high returns from seed crops. If only current payments had been made on these four contracts, the total six-year payment would have been reduced by about 10 per cent, and the reduction in debt for the area would have been less than the estimated provincial average. The reductions of 21·4 per cent and 25·5 per cent in Areas C and D are less than the provincial average, and vary considerably less than the averages for the areas of live stock and seed production.

Conclusions.—It is apparent that farmers generally have been using their increased incomes to reduce their farm debts and thus to obtain a greater degree of financial independence. In this regard the record of farmers in irrigation districts is similar to that of farmers in other parts of the Province of Alberta. However, the rapidity with which indebtedness has been reduced is associated with the type-of-farming. Among irrigated farms, progress in liquidating land debts has been most rapid in districts producing beets and canning crops, and in areas of live stock production.

WARTIME AGRICULTURAL PROGRAMS IN TWO OF THE UNITED NATIONS[2]

F. Shefrin, H. K. Leckie, J. N. Lewis

The war has resulted in many changes in the agricultural economies of many of the United Nations. In the Soviet Union, because of the invasion and loss of rich agricultural land, the Russians had to expand agricultural production in the interior. In the United Kingdom, because of a loss of supply and shipping difficulties, agricultural production was stepped up. The following briefly outlines in part the agricultural policies and some of the results.

Union of Soviet Socialist Republics

In the Soviet Union, the Nazis over-ran some of the most fertile lands in European Russia. They occupied all of the Ukraine and the Crimea, and invaded the Caucasus. These rich farmlands produced not only enough food for their own population, but had a surplus for export to other parts of Russia.

Altogether, the invaded regions accounted for about 40 per cent of the Russian pre-war crop area. The loss was greater in the case of some individual crops. The invaded regions had 35 to 40 per cent of the wheat acreage, including most of the high-yielding winter wheat; about 40 per cent of the rye area; 60 per cent of the barley; over 80 per cent of the sugarbeets, and more than half of the sunflower seed area—the most important Russian oil seed crop.

Confronted with a critical food situation, the Soviet Government combined every effort to expand production in the uninvaded areas. There were, however, several obstacles to such a program, namely shortages in farm labour, equipment and supplies.

The Soviet Union had a real manpower problem to tackle. Local authorities were given the power to draft all available town and country workers for the farms and machine tractor stations. Men from 14 to 55 and women from 14 to

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[1] During the years 1939, 1940 and 1941 when the price of wheat at points within the Eastern Irrigation District was below 50 cents a bushel, annual payments were deferred with no additional charge to purchasers. Many contract holders took advantage of this privilege.

[2] Much of this material was presented by the authors in a radio broadcast over C.B.C. on June 19, 1944.

50 years of age came under this order. Farm work was arranged for students and school children during their summer vacation. Soviet farmers were required to put in more work days than usual on collective farms, particularly in the busy season. During the past two years, over 700,000 Russian women learned to run tractors and combines.

The farm machinery situation was made more acute because farm machinery factories were switched to war production, and many were destroyed by the invading Nazis or dismantled by retreating Soviet forces. This meant farmers in the Soviet Union had to make fuller use of every bit of remaining equipment. To-day, every Soviet tractor must pull a full load. Combines and binders have to operate at least 16 hours a day. Threshing must start not later than 5 days after cutting has begun, and threshing machines keep going at least 20 hours a day—for they allow just so many working days for harvesting each crop.

Their collective farms, state farms and machine and tractor stations each have a detailed plan of work showing exactly how they would use their labour and machinery, even to the gleaning and raking of harvest fields so that not a stalk would be wasted.

During the first two years of war there had been in the Soviet Union a maximum extension of farming in the rear areas, especially in the East, in the Urals, and in the Volga Region. Altogether some 20 million acres of virgin soil was brought under the plough in the East.

The war has resulted in the reorganization of agriculture in many regions. New crops were introduced in regions where they had not been grown before, such as sugarbeets. This crop was especially heavily concentrated in the invaded regions of Central and Southern Russia. Now sugarbeets are grown in Central Asia.

Uzbekistan, in Central Asia, was always the main cotton base of the U.S.S.R., and grain was sent there from the European part of the country. During the war the collective farms of Uzbekistan maintained the acreage under cotton, while increasing the acreage under grain to 800,000 hectares (about 2 million acres), thus meeting the Republic's demand for grain products.

During the war, Siberia, the Urals and Kazakhstan have become major sources of grain supplies for the Red Army and the civilian population. These regions have also increased the area sown to sugarbeets and oil yielding plants, in order to make up for the temporary loss of oils in regions in the southern part of the U.S.S.R.

In view of the severe shortage of food, the city population has been encouraged to plant individual victory gardens in which potatoes and vegetables are grown. In 1943 over 11·6 million city workers and employees had vegetable gardens compared to 5 million in 1942. The area planted increased from 1,250,000 acres to 1,900,000 acres.

Rehabilitation.—Restoration goes hand in hand with liberation. The Soviet Union is already "unscorching" her earth in the Ukraine. As the German armies have been rolled backwards the farmers have returned, the machinery has followed close in the wake of the Red Army, and the seeds have been sent from other parts of the country.

But a formidable agricultural problem has been posed by the recovery of most of the areas occupied by the Germans. Conditions no doubt vary in different sections, depending upon the length of enemy occupation and speed of the subsequent withdrawal. Both Russian and German reports agree on the fact of tremendous destruction in the rural areas. The Nazis slaughtered live stock, destroyed homes, farm buildings, power stations, cut down orchards to the very roots, and filled many of the wells with sand.

In the decree dated August 21, 1943, the Council of the People's Commissars of the U.S.S.R. and the Central Committee of the Communist Party, there was a list of the various steps that should be taken as the enemy evacuated province after province. This decree provided an outline of the measures to be taken by the Government, both Federal and local, and the inhabitants themselves of the areas named (Kalinin, Smolensk, Kursk, Orel, Voronezh, Rostov and Stalingrad, and Krasnodar and Stavapol territories—a total of 272,150 square miles), in close co-operation, to restore the homes and buildings that had been destroyed, build up again the live-stock population of the farms, and finally carry out farming operations and fall planting of winter crops on the land that could be tilled with the facilities available.

The following list outlines some of the steps that were taken:—

1. Return to the collective farms of live stock evacuated to the East.
2. Relief in seed for farms for the fall planting in 1943.
3. Restoration of machine-tractor stations and machine-tractor repair shops.
4. Assistance in the restoration and building of dwellings for farmers.

The Government provided seed grain and also undertook to bring back large quantities of tractors, ploughs, seeders, combines and other tools from the districts to which they had been evacuated. The skilled working personnel of the collective farms who had been evacuated were all to be returned to their home districts at Government expense, and in addition, newly graduated agricultural specialists were to be assigned as needed.

In the report published February 5, 1944, entitled "The Execution of the Decree of August 21, 1943", a high degree of success was indicated.

By June 1, 1944, collective farmers of the Ukraine had accomplished 95 per cent of their spring sowing plan. In the Dniepropetrovsk Region sowing exceeded the plan by 270,000 acres and in the Zaporozhye Region by 100,000 acres.

Roughly for the country as a whole, by June 1, 1944, 8,750,000 acres more have been sown than in the same period in 1943, and of this excess over 5,000,000 acres are in grain crops. This also includes the work of the regions liberated from German occupation.

Sowing of the most important industrial crops is also progressing at a faster pace than last year. Cotton planting is completed; almost twice as much sugarbeet has been sown; sunflower sowing was well ahead of last year, with an area more than twice as large sown to date; the plan for rubber-bearing kok-sagyz was fulfilled.

The United Kingdom

The wartime food policy of Britain is designed to adequately feed the people and conserve shipping. The program included the following points:—

(1) The British diet to be made simpler and plainer.
(2) The cultivated area to be increased with production priority given to crops for direct human use such as cereal grains, potatoes, sugarbeets and vegetables.
(3) Milk to be given first place in the output of animal products, followed by beef and mutton.
(4) Pig and poultry production to be severely curtailed to conserve feed-stuffs.
(5) Farmers to be assisted in the production job by assurance of essential supplies, by provision for farm labour, by technical advice and remunerative prices.

To get this program underway without losing time the British Minister of Agriculture was given almost dictatorial powers, but to get farmers co-operating a good deal of authority was delegated to local groups. Agricultural Executive Committees were set up in each of the 62 counties of England and Wales, manned for the most part by farmers of recognized ability and experience, and assisted by technical agriculturists. The County Committees then proceeded to select local farmers to sit on District Committees to carry the program closer to the actual production units—the individual farms. Over 4,000 persons serve on these local committees.

The main job of the County Agricultural Executive Committees is to speed up production. They have the right to look over any farm in their county and direct the farmer to plough up grassland or to carry out any other instructions which the Committee thinks will improve his production.

To enable the Committees to operate more intelligently, a Farm Survey was conducted. A preliminary survey was carried out in 1940, followed by a more elaborate one begun in 1941 and completed in 1942. On the basis of the very complete information provided, the County Committee know which farmers need the most assistance and advice (Class C), those who need some assistance (Class B) and those who can be left pretty much on their own (Class A). The idea is to get as many farmers as possible to do a first class job with the necessary help and supervision. Of course, if a farmer either can't or won't bring his farm up to at least the minimum standard, the County Committee has to step in. Some farmers have been fined or imprisoned and a few replaced on their farms for the duration, but on the whole there has been excellent co-operation and in some countries practically no compulsion at all has been necessary.

The "ploughing-up" campaign in Britain, which was already underway when war broke out has been eminently successful. Encouraged by ploughing subsidies and with the help of modern tractors much grassland has been brought back into cultivation. By 1943, it is estimated, ploughed land had increased by about 6,000,000 acres or 34 per cent since 1939. In 1944, compared with 1939, wheat acreage had increased by 78 per cent, oats by 61 per cent, potatoes by 109 per cent and tillage by 69 per cent. At the same time, by extensive national drainage schemes and other means, a good deal of otherwise waste land has been reclaimed and brought into useful production. This has counterbalanced an extensive loss of agricultural land for military and industrial purposes.

One of the most remarkable changes in British agriculture during the war has been the rapid shift to machine farming. There were already 55,000 tractors in Britain by 1939, but the number has now tripled. Combines, too, have also been put to work. The government has taken an active part in assisting farmers to secure farm machinery and an Agricultural Development Board and a National Institute of Agricultural Machinery have been set up to aid in developing, testing and standardizing new types of agricultural machines.

As in other countries of the United Nations, the farm labour situation in Britain has presented one of the more difficult production problems. Early in the war many experienced British farm hands went into the armed forces or war industries, but still production has gone on. More machines has been one answer, but other measures have been taken to meet the emergency. These include:—

(1) The introduction of minimum wages for farm workers.
(2) The "Undertakings Order" making it illegal to employ farm workers or coal miners in other industries without permission from the Ministry of Labour.
(3) The transfer of older men from non-essential industries to agriculture to replace younger farm workers selected for the Armed Services. (Since early in 1942 District Manpower Boards have been empowered to defer essential farm workers from military service.)
(4) Organization of the Women's Land Army, the Emergency Land Corps and the Voluntary Land Clubs.

(5) The setting up of mobile labour gangs and pools with the provision of special hostels.
(6) Special harvest leave for members of the Armed Forces and the use of war prisoners.

Urban people in Britain have also been encouraged to produce more vegetables under the "Dig for Victory" Campaign. In 1943 it was estimated there were 1,675,000 plots being cultivated on allotments, compared with about 930,000 before the war, while at the same time private vegetable gardens increased from 3,000,000 to 5,000,000.

Valuable service in Britain's wartime food program has been rendered by research men and trained agriculturists. The Agricultural Research Council has since 1941 been given increased grants to assist in promoting agricultural research, and in June, 1941, the Agricultural Improvement Council was established with the object of making results of agricultural research available to farmers as quickly as possible.

Has British agriculture succeeded in its wartime objectives? Certainly it can be said that by stepping up total food production by about 70 per cent, British farmers have ensured an adequate diet for the people and at the same time have conserved precious shipping for weapons of war. The National Milk Scheme has been instrumental in improving the diets of thousands of poorer families. The land resources of the nation which had been neglected for two decades, have been improved and extended. Increased use of farm machinery has added 2,000,000 h.p. to the land and made British farms the most highly mechanized in Europe.

NOTES

On June 21, 1944, the United States Department of Agriculture in a press release indicated the principles of guidance for establishment of veterans and others on farms following the war. This was originally released by the Interbureau Committee on Post-War Programs. Basing the statement chiefly on the study of experiences in the United States after the last war, and during the last decade in helping farmers to get established on the land under conditions that promote efficient and effective utilization of resources, the Interbureau Committee pointed to favourable opportunities in farming but added a word of warning to those inexperienced in the field. It referred to the need of actual farm experience.

Under special arrangements effective July 7, temporarily suspending certain crossing formalities, Canadian threshing outfits will help harvest the Western Great Plains grain crops while American machines and crews will go to the Prairie Provinces. Canadian threshing outfits may remain in the United States until September 15. United States machines and crews may enter Canada when their services are required but may not remain longer than December 31, 1944. In their announcement of the plan, the governments of both countries point out that a similar arrangement will be in operation for each wartime grain harvest season.

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THE ECONOMIC SITUATION

Although industrial and business activity in Canada has tapered off somewhat after a sustained period of wartime increase, most of the economic indexes showed a higher average during the first eight months of this year than in the same period of 1943. The index of the physical volume of business showed some recession in the four months April through July, but in August this tendency was checked and the index remained approximately unchanged from the previous month. The general wholesale price index has shown only fractional changes during 1944, although the index for Canadian farm products in August was 6·0 points lower than in January.

Over the period from January to August, 1944, the physical volume of business index averaged 3·0 per cent higher than in the same months of 1943. At the same time the average index of wholesale prices increased by 3·7 per cent, and bank deposit liabilities increased by 17·5 per cent. The value of export trade increased substantially, but the employment index over the first eight months averaged 181·9, or slightly lower than the average of 182·0 for the same months in 1943.

Prices.—The general wholesale price index for September was 102·3 compared with 102·3 in August and 101·1 in September a year ago. The index of Canadian farm products in September was 101·0 whereas in August it was 101·2 and 97·9 in September, 1943. Field products in September stood at 91·0 and animal products 117·8.

Commodity distribution has continued at a high level. During the first seven months of 1944, wholesale sales recorded an increase of 12 per cent and retail sales 7·4 per cent.

The cost-of-living index, as compiled by the Dominion Bureau of Statistics, stood at 118·8 on September 1, 1944, compared with 118·9 on August 1 and 119·4 on September 1 last year. The fractional decrease in August was mainly attributable to seasonally lower prices for potatoes and fresh vegetables which caused the food index to fall from 131·5 to 131·2, despite slight price gains for eggs and butter. Other component indexes including rentals (111·9); fuel and light (108·7); clothing (121·5); and miscellaneous items (109·0) remained unchanged from the previous month.

Business Activity.—During the first eight months of 1944 the physical volume of business index averaged 240·2 compared with 232·9 last year. A downward trend in this index commenced after the record high point of 248·8 was reached last December, but after several months of continuous recession, the index showed little change during August, 1944, compared with the average of 232·2 in July. During the January-August period, the index of mineral production averaged 239·9 as against 242·8 in 1943, with gold mint receipts and coal production declining. The manufacturing index at 296·0 showed an increase of nearly 3 per cent. Meat packing establishments handled a record volume of live stock, particularly hogs and cattle. Cheese production recorded a gain of 12·7 per cent, but this was counter-balanced by a decline of about

NOV 1944

ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Living Costs and Production Indexes Computed by Dominion Bureau of Statistics: Index of Industrial Wage Rates Published by Department of Labour

Year	Wholesale Prices 1926=100				Retail Prices		Production and Wages 1935–39 = 100		
	All commodities (1)	Farm products (2)	Field products (3)	Animal products (4)	Urban Living Costs 1935-1939 =100 (5)	Farm Living Costs 1935-1939 =100 (6)	Physical volume of business (7)	Industrial production (7)	Industrial wages rates (8)
1913....	64·0	64·1	56·4	77·0	79·7	79·6	....	....	54·9
1914....	65·5	70·2	65·4	78·3	80·0	82·0	....	....	55·6
1915....	70·4	77·9	76·9	79·5	81·6	86·3	....	....	56·0
1916..	84·3	89·8	88·8	91·4	88·3	93·6	....	....	59·9
1917....	114·3	128·5	134·5	118·4	104·5	111·6	....	....	68·7
1918....	127·4	132·6	132·0	133·6	118·3	131·4	....	....	80·7
1919....	134·0	146·7	142·6	153·5	130·0	143·0	62·3	56·0	94·8
1920....	155·9	160·6	166·5	150·8	150·5	170·7	65·9	59·7	112·7
1921.. .	110·0	103·7	100·3	109·5	132·5	139·5	58·1	51·6	102·7
1922. ..	97·3	88·0	81·4	99·0	121·3	127·5	69·1	65·7	95·9
1923....	98·0	81·5	73·3	95·1	121·7	127·9	74·7	71·6	98·6
1924....	99·4	88·1	82·7	97·2	119·5	125·1	73·9	70·4	99·8
1925....	102·6	101·0	98·2	105·6	120·6	123·6	79·4	76·7	98·8
1926....	100·0	100·0	100·0	100·0	121·8	120·9	87·3	85·5	99·4
1927....	97·7	102·1	99·9	105·7	119·9	119·5	92·7	90·3	101·5
1928....	96·4	100·7	92·6	114·3	120·5	118·3	102·4	100·7	102·7
1929....	95·6	100·8	93·8	112·5	121·7	117·4	109·6	108·9	104·5
1930....	86·6	82·3	70·0	102·9	120·8	113·7	95·6	92·3	105·2
1931....	72·1	56·3	43·6	77·6	109·1	103·7	81·7	77·3	101·7
1932....	66·7	48·4	41·1	60·7	99·0	97·7	68·7	63·2	94·5
1933....	67·1	51·0	54·8	59·7	94·4	95·7	69·6	65·6	89·6
1934....	71·6	59·0	53·8	67·7	95·7	97·8	82·2	80·0	90·5
1935....	72·1	63·5	57·3	74·0	96·2	97·9	89·4	88·5	93·1
1936....	74·6	69·4	65·8	75·3	98·1	98·3	98·0	97·8	94·8
1937....	84·6	87·1	88·3	85·0	101·2	102·8	107·2	108·4	101·8
1938....	78·6	73·6	69·0	81·3	102·2	101·9	98·6	98·0	104·9
1939....	75·4	64·3	54·2	81·2	101·5	99·4	106·9	107·4	105·7
1940....	82·9	67·1	55·9	85·2	105·6	108·6	124·3	132·4	109·4
1941....	89·9	71·2	56·5	95·8	111·8	114·2	165·0	177·5	120·3
1942....	95·6	82·5	66·5	109·2	116·8	119·2	202·2	228·0	129·6
1943....	99·9	95·9	81·6	119·9	118·4	121·5	235·9	273·0..	139·5
1943									
June....	99·5	94·4	79·4	119·4	118·5	....	232·4	267·2	....
July....	100·1	96·4	82·6	119·4	118·8	....	236·3	270·2	....
Aug....	100·4	97·5	84·9	118·6	119·2	121·9	241·0	276·8	....
Sept...	101·2	97·9	86·1	117·6	119·4	....	236·7	280·9	....
Oct.....	101·9	103·6	90·8	125·0	119·5	....	239·5	283·3	....
Nov....	102·4	104·2	91·3	125·7	119·4	....	242·9	282·5	....
Dec....	102·5	104·6	91·7	126·1	119·3	....	248·8	282·0	....
1944									
Jan.....	102·5	104·0	92·1	123·8	119·0	....	247·0	275·4	....
Feb....	102·7	104·3	92·5	124·1	118·9	....	241·6	279·5	....
Mar....	103·0	104·5	93·0	123·7	119·0	....	247·8	282·7	....
April...	102·9	104·0	92·4	123·4	119·1	....	239·5	270·0	....
May...	102·5	101·8	91·2	119·6	119·2	....	236·0	263·8	....
June....	102·5	102·0	91·1	120·2	119·0		238·8	266·8	....
July ...	102·5	102·0	91·8	119·0	119·0	....	232·2	262·1	....
Aug....	102·3	101·2	91·2	117·9	118·9	....	233·1	263·5	....
Sept...	102·3	101·0	91·0	117·8	118·8	....	....	....	....

1. See Prices and Price Indexes 1913-1928, pp. 19-21, 270-289 and 1913-1939, p. 17.
2. Wholesale prices of Canadian products of farm origin only. See Prices and Price Indexes 1913-1937 p. 52, and Monthly Mimeographs 1943-44.
3. Wholesale prices of grain, fruits and vegetables.
4. Wholesale prices of animals and animal products.
5. See An Official Cost of Living Index for Canada, 1940.
6. Index numbers of Farm Family Living Costs 1913-38 and Farm Living Expenditures 1934 and Farm Family Living Costs Mimeograph.
7. Monthly Review of Business Statistics, p. 8, and Monthly Indexes of the Physical Volume of Business in Canada, supplement to the Monthly Review of Business Statistics November, 1932. Yearly index numbers for 1943, subject to revision.
8. Department of Labour, *Labour Gazette*, December 1943.

5·5 per cent in creamery butter output. The construction industry in the first eight months of this year recorded a substantial advance over the same period of 1943. The value of construction contracts awarded increased by 47·0 per cent, while building permits showed an increase of 61 per cent.

Trade, both internal and external, has been at comparatively high levels in Canada in 1944. The indexes of wholesale and retail sales during the first seven months recorded increases of 12·0 per cent and 7·4 per cent respectively during the first seven months over the same period of 1943. At the same time export trade volume increased by 28·6 per cent, from $1,595 millions to $2,050 millions. Imports also showed an increase of minor proportions, and the active trade balance was 21·8 per cent higher than in 1943.

The employment index at August 1, 1944, stood at 184·6 which was a little higher than at July 1, but lower than the index of 185·9 at August 1, 1943. The average of this index for the first seven months shows only a slight change from a year ago.

Live Stock Production.—The June 1 survey of numbers of live stock on farms revealed that in comparison with the same date a year ago, numbers of cattle, sheep and poultry recorded substantial increases, while decreases were shown in the case of hogs and horses. Numbers of cattle were 7 per cent greater than at June 1, 1943, and are the highest on record. Numbers of sheep were 8 per cent greater than a year ago, while numbers of hens and chickens had increased by 16 per cent.

Slaughterings of live stock at inspected establishments in Canada up to the end of September, were higher for all classes of live stock. For hogs the total was 6,559,851 compared with 4,683,327 a year ago or an increase of 40 per cent; for cattle the total for 1944 was 907,732 compared with 718,560 in 1943 or an increase of 26 per cent. In the case of calves the increase this year was 11 per cent and for sheep and lambs 18 per cent. Thus, total meat production in Canada in 1944 will exceed all previous records. By the end of the year it is probable that export purchases by the Meat Board to United Kingdom account will run to nearly 700,000,000 pounds of bacon and about 100,000,000 pounds of beef.

Dairy and Poultry Products.—Butter production in September showed a decline, the total being 30,900,000 pounds or 7 per cent less than in September, 1943. For the nine months of the year, production shows a decrease of 14 million pounds, or 5·5 per cent.

Cheese production in September also registered a seasonal decline, the total being 22,800,000 pounds or 2·8 per cent less than in September, 1943. For the year to date, however, cheese production shows an increase of 13,000,000 pounds, or 10 per cent.

For the first 9 months, production of concentrated milk products is 2·5 per cent greater than a year ago, while ice cream production shows an increase of 500,000 gallons.

Poultry flocks in Canada are producing by far the largest volume of eggs on record this year, and deliveries of eggs for export in powdered form to the Special Products Board have been approximately double any previous year. Drying plants have been working to capacity to process these eggs, and large quantities of frozen egg melange have accumulated in cold storages. Production of dressed poultry has been at high levels, and considerable quantities are being released for export.

Crops.—The Dominion Bureau of Statistics on September 26 issued the last of the 1944 series of sixteen telegraphic reports on crop conditions in the Prairie Provinces. At that date virtually all of the threshing was completed in the southernmost areas, but considerable delays were being encountered in the northerly areas. All in all the harvesting conditions in the 1944 season have been much less favourable than in 1943, and continued wet weather in Western

Canada resulted not only in delays but also in a lowering of grade. In Eastern Canada, however, hot, dry weather was general at harvest, and threshing was completed at a comparatively early date. In general, although the 1944 grain crops will not by any means equal the bumper 1942 harvest, the out-turn will be reasonably satisfactory, and Eastern Canada particularly will be much better supplied with feed grains than a year ago. The 1944 wheat crop in Western Canada was estimated officially at 447,700,000 bushels, which is considerably greater than the 1943 crop of 293,700,000 bushels, but substantially lower than the record 1942 crop.

The first estimate of late sown crops which was released on October 11 shows the following expected total production for various crops, with the corresponding 1943 figure in brackets: potatoes, 47,540,000 cwt. (43,541,000 cwt.); sugar beets 608,000 tons (473,300 tons); grain corn 12,390,000 bushels (7,775,000 bushels); dried beans 1,431,000 bushels (1,407,000 bushels); dried peas 1,488,000 bushels (1,562,000 bushels).

Fruit crops in 1944 were mostly better than in 1943. This was particularly so in the case of apples and peaches, the latter crop being three times as large as last year, and the former about one-fifth larger.

Manpower.—The problem of seasonal harvest labour was again acute this year, but National Selective Service utilized various plans to assist farmers in finding extra help including harvest excursions, summer work for school children and vacationers, prisoner of war work camps, etc. As a result of the combined efforts of Dominion, Provincial and local authorities, as well as individual initiative by farmers themselves, 1944 crops were on the whole safely garnered without undue loss from lack of manpower.

Labour problems have also been acute in the food processing industries, particularly packing plants and cold storage warehouses. Although the actual number of packing house workers has been fairly well maintained, a good deal of skilled personnel has been lost, and has been replaced by unskilled workers, both male and female. This has resulted in lowered efficiency and decreased output per worker. Delays which have been experienced in harvesting operations in Western Canada have also meant that extra seasonal farm help normally employed by the packing industry in the fall has not been available at such an early date this year.

Exports.—Frequent references are made to the position of Canada as an exporter of agricultural products. It is interesting, therefore, to examine the percentage of production of major agricultural products exported in the period 1935-1942. These data have now been made available by the Agricultural Branch of the Dominion Bureau of Statistics. As might be expected, some variation in the percentage exported occurs from year to year over this period. In 1939 only 36·88 per cent of the production of wheat was exported, but the percentage was 96·04 in 1936. In 1941 71·04 per cent was shipped to other countries. In 1942, 9·20 per cent of the production of oats was exported. This was the highest figure for any of the years. In 1941 only 1·85 per cent of barley production was exported whereas in 1936, 24·18 per cent was shipped out of the country. In 1935, 19·10 per cent of the hay production was exported but by 1941, this figure had risen to 38·06 and it was 34·81 per cent in 1942. Eggs have become a major export product; in 1936 we exported 0·51 per cent of our production but in 1942, 9·65 per cent was shipped to other countries. Exports of apples have slumped since the war. In 1936, 61·90 per cent was exported whereas in 1940 only 14·70 per cent was sold outside Canada and in 1942 the percentage was 15·90. In 1938 we exported 39·01 per cent of tobacco production. This trade fell to 6·23 per cent in 1940 but in 1942 it was 17·50. Back in 1936 we exported 57·88 per cent of wool production and the low point of wool exports was 1942 when only 2·18 per cent was sold abroad. Exports of cattle have been more uniform than many other products. The high point in the period under discussion was 1936 when 17·99 pe rcent was shipped abroad.

WARTIME POLICIES: FRUITS AND VEGETABLES

E. P. Reid

Dominion Government policy respecting production and marketing of fruits and vegetables in wartime has been developed and administered principally in the Department of Agriculture and the Wartime Prices and Trade Board. The Department of Agriculture's role has been that of sustaining branches of the industry drastically affected by the war, ensuring needed production, and negotiating and fulfilling contracts for shipments to the United Kingdom and other allied governments. A number of boards have performed these functions. The Prices Board has been responsible for price control and supply at the consumer and trade level. This necessitated its appropriate administrators studying the processing industries and recommending action concerning them, whether in the form of subsidy or otherwise.

Agricultural Supplies Board

Apple Assistance.—The agricultural product which earliest received subsidy or Government price support was apples. Production in Nova Scotia was organized previous to the war mainly to supply the export market, particularly that provided by the United Kingdom. Pre-war exports from British Columbia averaged 50 per cent of the crop. Apples had little claim on cargo space in the convoyed shippings which the war necessitated. Action followed promptly after a conference of interested parties in September 1939. As regards the Nova Scotia industry, 80 per cent or more of the product of which was customarily exported, the Dominion Government offered assistance to the growers in arranging exports under war conditions and guaranteed manufacturers of apple products against loss on their purchase of 34 selected varieties ordinarily exported. The limit of the guarantee was 1½ million barrels and the prices assured to growers were 65 per cent of the average 3-year net return for the selected varieties. The Nova Scotia Apple Marketing Board was empowered under the War Measures Act to control apple marketing in that province.

Assistance to British Columbia consisted of Government purchase of apples for distribution to Prairie drought victims and a guarantee against loss in exporting to an amount of $425,000. Assistance was also offered to Ontario exporters, but only small payments had to be made. The various agreements were drawn up in the name of the Minister, but the Agricultural Supplies Committee, as it was then called, was the body which chiefly made the arrangements and administered the schemes. An important arrangement for all producing areas was the zoning of sales within Canada, the boundaries being revised from time to time during the season.

Assistance for British Columbia apple growers amounted to only $220,000, as exports were greater than anticipated. The Nova Scotia scheme led to agreements with 11 processors in that province, who canned or dehydrated 1,224,795 barrels, mainly of grades much superior to those usually processed in pre-war years. The cost to the Government was about $3½ million. On May 15, 1940, the Government assumed ownership of processed stocks, from which sales of about $1 million had already been made, and the balance was estimated to be worth $1·4 million. Considerable quantities of these canned and evaporated apples were donated to the Canadian Red Cross and the British Ministry of Food.

In each subsequent year to date agreements have been made with the apple marketing boards in Nova Scotia and British Columbia. Both boards have been vested with the necessary power to regulate the marketing of the commercial crops of their province. These agreements have continued to be based on (1) the need for stabilization of the growers' economic condition whilst overseas shipping conditions have been disrupted, (2) the desirability of preventing great disturbance of apple markets within Canada, and (3) the fact that only by such assistance could the tree population and quality of orchards be maintained to meet post-war demand for Canadian apples. Government payments on account of assistance to the industry have totalled about \$9·8 million for the five seasons of the war, and of this amount less than \$8,000 was paid in Ontario, \$1·3 million in British Columbia and about \$8·5 million in Nova Scotia. The sense in which these were disbursements for the benefit of the entire apple growing industry can be understood if it is kept in mind that Nova Scotia apples by the millions of barrels would have been dumped on central Canadian markets for whatever they would bring if the dehydration and export programs had not been arranged with the Government. To a lesser degree the same thing is true for British Columbia.

The British Columbia industry is largely out of the class of war casualties and disbursements by the Government to implement the agreement declined in 1943-44 to \$55,000 after having been over \$600,000 in 1940-41. A chief concern henceforth is not subsidy obtainable, but powers assigned annually under the War Measures Act to the British Columbia Tree Fruit Board. The current agreement was authorized in September and somewhat according to an established pattern, it provides for price support to net an average return on the first million boxes sold in Western Canada of \$1.40, \$1.30 and \$1 per box respectively for wrapped, unwrapped and bulk apples. By a total limitation of \$250,000 in the authorized disbursement, an average loss of no greater than 25 cents a box will be recognized by the Government. Some money will evidently be paid under this clause, as prices of some early varieties have been well under \$1 per packed box.

In 1943 Nova Scotia evaporated apples were subsidized instead of being purchased as in earlier schemes. For the first 10 million pounds, 16 cents per pound was paid, and for any part of a further 6 million pounds, 10 cents per pound was paid. The Nova Scotia Board could count on these receipts in addition to the ceiling price of 13 cents per pound on both export and domestic fresh sales. As in the case of British Columbia sales, export and domestic fresh sales were considerably more remunerative in 1943 than in earlier war years. Provision for assistance on the current Nova Scotia crop has been devised in the knowledge that the ceiling price on evaporated apples was being increased from 13 to 20 cents a pound. The subsidy of 9 cents will permit gross returns to the Nova Scotia Board of 29 cents a pound on the product of 1,100,000 barrels. As many as 650,000 barrels of these may be purchased for shipment to Britain.

Wartime Gardens.—The wartime garden movement had been reviewed from time to time by the Supplies Board since the beginning of the war. This movement received much local encouragement including some provincial government backing in the earlier years. The Board studied the supply situation of commercially produced vegetables and found that there was no call for a nation-wide campaign of encouragement of home gardens until 1942. In the spring of 1943 there was a potato shortage and the prices of most vegetables had risen considerably. The Board organized a campaign employing various methods of publicity and issued complete but simplified bulletins for wartime gardeners. Attempts to measure by correspondence surveys the extent of wartime garden production made in earlier years had been none too successful, so the Board gave technical guidance to the Women's Voluntary Services for surveys they undertook in 1943 in seven cities of the achievements of wartime gardeners. Both the promotional campaign and the surveys have been renewed this year, when twelve cities are having garden surveys.

Technical advice to processors.—The food requirements of the United Kingdom and the shortage of shipping space on the North Atlantic route pointed to the need for high class dehydrated products, which could be reconstituted and cooked with the retention of a high proportion of their original nutritive qualities and palatability. Experimental Farms scientists worked to develop processes for such products and the Supplies Board supplied technical advice and equipment to processors in the course of establishing the methods on a commercial scale. Various apple products have been produced by such collaboration between the Board and the processing industry. The dehydration of apples, potatoes, and a number of other fruits and vegetables has been commenced and expanded similarly. The increase in the utilization of vegetables in wartime dehydration has been very marked. This can be illustrated by cabbage in particular. There were negligible amounts dried before the war and in 1943, 20 per cent of a domestic crop of about 90,000 tons was so processed. The Special Products Board has disposed of most of the output of the dehydration industry by shipments to the United Kingdom.

Special Products Board

The Special Products Board was formed in 1941, and its membership and staff consist of Departmental officials, with also a member representing the Department of Trade and Commerce. All fresh and processed apples moving to Britain since its formation have been procured by this Board. This included from the 1940 crop 32 million pounds of processed apple products worth $1·5 million. From the 1941 crop 1·2 million boxes and 111,000 barrels of fresh apples, 6 million pounds of evaporated apples, 2 million pounds of apple pomace and 4,000 barrels of concentrated apple juice, were shipped. The 1942 crop provided 7 million pounds of evaporated apples sent to Britain. Fresh apples moved overseas again in 1943-44, 200,000 boxes and 161,000 barrels, as well as over 3 million pounds of evaporated apples. During the same period the Board forwarded large shipments of other products such as fruit pulps for jam, canned vegetables, and over 17 million pounds of dehydrated vegetables.

Agricultural Food Board

Vegetables for processing.—On March 1, 1943, the Agricultural Food Board, consisting of senior officials of the Department, was formed and vested with responsibility for ensuring adequate production of farm products, for diverting them to the armed forces and priority users, and for presenting to Council recommendations for subsidies to be paid to primary producers. An early subsidy policy for which it took responsibility was that concerning bonuses to producers of vegetable canning crops. Subsidies to producers of tomatoes, corn, peas and beans had been introduced in 1942 by the Wartime Prices and Trade Board because the four vegetables had nutritional priority and because maintenance of the price ceiling on canned goods precluded processors' increasing their paying prices very much, although it is clear that producers could not supply sufficient produce at 1941 prices. The same crops remained beneficiaries of subsidies in 1943, but a recognition of generally higher costs, particularly for labour, indicated the need for increased rates. These were determined as follows (1942 rates in parentheses): tomatoes $3 per ton ($1); corn $4 per ton ($2); peas $10 per ton ($7.50) or $2 per ton straw weight ($1.50); green or wax beans $7.50 per ton ($5). Disbursements under this policy made through the medium of the canners, were about $950,000 on smaller tonnages than had been processed in some years. It was not widely believed, however, that the small crops were in any way attributable to inadequate subsidies, as weather conditions during the growing season led to poor yields on what might have been adequate acreages. A substantiation of this point of view was the general increase in contracts, planting and harvests in 1944, although subsidies on three of the crops were maintained at the 1943 level. There was, however, recognition of the heavy labour factor in tomato production and the high nutritive value of tomatoes in the increase of the subsidy to $6 per ton. The 1944 scale of subsidies represents approximately the following percentages of gross returns to growers, which are required to be at least 1941 prices plus subsidy; tomatoes 30 per cent; corn 27 per cent; peas 22 per cent; beans 10-12 per cent.

Jam berries.—Another group of producers' subsidies which affect the administration of the processing industry were those paid on berries for jam in 1943 and 1944. Earlier action under the Prices Board had been limited to strawberries in British Columbia. On May 21, 1943, an Order in Council entrusted the Food Board with the paying of grower's subsidies of three cents a pound on berries used in pectin and compound jams, and manufacturers were required to pay designated minimum prices. The two cents per pound paid on British Columbia strawberries in 1942 was taken over by Agriculture and the continuing difficulty of the industry there further recognized in a total subsidy of 6 cents a pound. Under this policy disbursements have not exceeded $275,000, the crops having been generally disappointing. The policy and rates have been authorized again for the 1944 harvest, and berries for pure jam as well as raspberries for canning will be eligible this year. Deliveries have not been much greater this year than last, but weather has again been somewhat unfavourable.

The distinction between these subsidies under the Food Board and those on tree fruits for processing paid by Commodity Prices Stabilization Corporation Limited (mentioned below) is recognized in the fact that production of berries can be stimulated in a year, whereas that of peaches, pears and plums can only be affected within a period of 5 or 10 years. Thus the main effect of the latter group of subsidies, particularly under conditions of eager demand and ceiling prices, can only be to enable processors to obtain a share of the crop. Whilst there can be a similar result arising from the Agricultural subsidies on berries, there is also the direct inducement to growers to set out plantations to produce as early as the next year. As regards subsidies on berries, canners and processors of quick-frozen products have been left to obtain supply as best they could, without the right to reimbursement of any subsidies they might pay. Dealers in the fresh market, on the other hand, had no ceiling in 1943, and this year's ceiling was at a level to facilitate their getting a share of the crop. Processors are not held to ceilings in their paying prices, only being required to use their judgment as to what they can afford and still do business under their selling ceiling price.

Wartime Prices and Trade Board

Fresh products.—When the overall price ceiling became effective at December 1, 1941, fresh fruits, fresh vegetables and greenhouse products were exempted. The officially stated reason for this was that such products "are normally subject to wide seasonal fluctuations." At that time the base period of September 15 to October 11, 1941 governed the ceilings for most products subject to control. Subsequently more and more products of all kinds have been made subject to general industry rather than individual dealer ceilings. As a result of the administrative experience thus gained and in order to check the upward trend of fruit and vegetable prices, the situation now is that virtually all imported fresh produce and the leading items of domestic produce are controlled as to maximum lawful prices by a large number of orders issued between January 20, 1942, and the present time.

The first fresh vegetable to be made subject to ceiling price control was onions, and the method was to designate the period January 5-10, 1942, as the basic period for determining individual wholesale and retail price ceilings. Shortly afterward a similar device was applied to potato prices, the base period being February 2-7, 1942. The only other measures in this field in 1942 concerned bananas and oranges. The method of controlling banana prices was to permit charges by a wholesaler of his landed seaboard price or 5 cents per pound, whichever was lower, all transportation charges and taxes, and a markup not exceeding 2¼ cents and 2½ cents on the stem in eastern and western Canada, respectively. Retailers were similarly controlled. This order was effective May 18. Orange price control, effective December 7, 1942, consisted in repealing certain taxes which had been levied on them and limiting wholesalers and retailers to their markups of the basic period or to 50 cents a box and 25 per cent of selling price respectively, whichever was the lower.

In the first half of 1943 no other fresh fruit or vegetables were made subject to price control, but in June some import taxes were removed on a considerable list of fruits and vegetables. With the passing of an order on August 12 controlling the prices of peaches, pears and plums, the Wartime Prices and Trade Board commenced a program of control of the main items of domestic production and virtually all imports of fresh fruits and vegetables. By the end of 1943, control had been extended successively to grapes, apples, grapefruit and lemons, root vegetables and cabbage. Continuing the extension of this control in 1944, orders were successively passed concerning markups on United States ceilings for 37 imported items and domestic strawberries, raspberries, cherries, and apricots.

The methods of effecting price control in all these instances varies greatly in detail, but for domestic products the usual action is to schedule basic maximum prices, either f.o.b. or at distributing centres, together with maximum specific or percentage markups. Territorial and seasonal differentials are usually set forth in a pattern reflecting conditions in a recent open market period. The control of potato prices has required the issuing of almost as many orders as for all other fresh fruits and vegetables combined, but half of these were passed during a period when few other horticultural products were under control. Furthermore, the pattern of the more recent potato orders has been similar to that used for control of prices of other seasonal commodities, and it appears that the experience gained in solving the potato problem has been utilized in subsequent rapid expansion of control in this field. The procedure now appears to be annual renewal of each order controlling the prices of one or more fruits or vegetables, with the maintenance of the basic scale of prices already established but embodying modifications necessitated by crop or market conditions.

Canning Crops.—Processed fruits and vegetables were subject to price control from the commencement of the overall policy in December, 1941, inasmuch as they were not exempted from provisions of the Wartime Prices and Trade Regulations. However, a difficulty arose when retailers' base period ceilings were based on advance prices for the 1941 pack, whereas canners' prices had risen by the end of the season. Action in March, 1942, consisted of a "roll-back" of canners' prices with some squeeze on canners' markups, and subsidies to holders of stocks at March 31. The retail ceilings were maintained at a cost to the Treasury for 1941 pack of $264,734.

Effective July 1, 1942, the main types of canned fruits and vegetables were made subject to specific maximum canners' prices and controlled markups. The same order provided canners' and growers' subsidies, and floor prices for canners. The growers' subsidies applied on tomatoes, corn, peas and beans and were devised by authorizing canners to pay stated increases over their 1941 prices in return for which they could count on the floor price guarantee for their own sales by being permitted to sell any left over pack on or after February 1, 1943, to the Board's agent (Commodity Prices Stabilization Corporation Limited) at prices returning more than the ceilings and less than ceilings plus canners' subsidy. Actually no such distress sales were made, but it is understood that nearly all canners paid these additions, which were covered by a portion of the subsidy they received on their processed vegetables. The rates were tomatoes $1 per ton, corn $2 per ton, peas $7.50 per ton ($1.50 straw weight), and beans $5 per ton.

In a revision of the order for 1943, ceilings were substantially maintained, as also were canners' subsidies, except that the latter were revised downward because growers' subsidies and reimbursement of them to canners had been transferred to the Department of Agriculture. The 1943 policy had been made known to canners in March by means of a Letter of Intent from the Administrator. The same device was followed in 1944, the Letter going out on March

4, and the Order being passed in July. Again basic conditions were maintained for canners, the growers' situation continuing under the jurisdiction of the Department of Agriculture.

Fruits and vegetables packed by home canners had remained meanwhile under individual ceilings determined in the basic period. This group of processors numbers 2,000 or more in Quebec province and elsewhere. They are distinguished by the limited nature of their operations, the fact that they grow rather than purchase the produce they can, and their not being concerned with sales tax, as the Department of National Revenue issues licences only to operators having net total packs of 10,000 pounds or more. Apparently supervision of this trade had been difficult inasmuch as many operators had few or no current records, let alone records of transactions in September and October, 1941. Accordingly, in May, 1944 a uniform ceiling order was passed setting a scale of prices related to that for commercial canners and taking account of the home operators' non-collection and non-remittance of sales tax. Only the four vegetables on which growers' subsidies are paid were covered in the order.

Fruits for processing.—Jams and jellies were controlled on the basis of individual ceilings in 1941 and 1942, but effective June 28, 1943, an order set uniform maximum prices for these products. The order followed investigation of the industry, and on this basis manufacturers' subsidies were provided for most types of jams. Emphasis was on pectin or No. 2 grade of jam, however, corresponding to provisions of the agricultural order providing growers' subsidies for jam berries except those going into pure jam.

The other main Prices Board provision for processing fruits was payment of subsidies on raw tree fruits of the 1943 crop. The purpose of these subsidies was to enable canners and jam makers to compete with the fresh fruit market in getting some supply, and in that sense the payments were not growers' subsidies. However, specific prices much in excess of those of recent years had to be paid in order that the processor might qualify for his considerable subsidy. The scale was as follows, the first figure being the required fixed price to be paid per ton and the second the amount of drawback for which the processor qualified: peaches $130 and $67.50; Bartlett pears $100 and $40; plums $100 and $50. The cost of these subsidies was $597,930. A year earlier this type of payment was made at the rate of $5 per ton on processing peaches in Ontario. Five times as much such fruit moved to processors in that year as in 1943, and the subsidy cost was $66,594. Also in 1942 payments to processors of strawberries in British Columbia were made at the rate of 2 cents per pound when a total of 8 cents or more was paid to growers. Six cents had been the price in 1941. The purpose of this subsidy was to encourage new white operators of acreage previously owned by Japanese. The disbursement was $63,997, indicating purchases of 3,200,000 pounds for non-export, non-priority processing, an amount much less than in immediately preceding years. The tree fruit subsidies payable on processors' purchases of 1944 crops are as follows (all rates per ton): peaches, $32.50; pears $17.50 to $40 according to grade and type; plums $40; apricots $42.50; cherries $30. In each case the processor had to incur a net cost of at least the price he paid in 1941.

Rationing.—Jams and canned fruits were amongst the items included in preserve rationing introduced in September, 1942. These measures have been of little or no concern to producers, as the scarcity suggesting the need for rationing had already had its effect in supporting market prices at or near ceilings. Any subsequent changes in supply have been met with alterations in coupon values, and it is not believed that any but very minor instances of gluts have occurred in any way reflecting on growers' prices.

Supplies.—There has been a series of Wartime Prices and Trade Board orders governing size, shape and material of processed fruit and vegetable containers. These regulations standardized bottle and can sizes, placed quotas on use of tin cans for some commodities in relation to 1941 pack (berries, baby foods, etc.), and ruled out the packing of certain products (beans, apple sauce, etc.). Such orders have been passed by administrators of metals or glass, but in consultation with Foods Administration and Department of Agriculture, and have actually been part of the program to direct and encourage processing of priority fruits and vegetables.

Use of grades.—A characteristic of all Wartime Prices and Trade Board ceiling price control activities in farm products is the employment of the quality standards set forth in previously existing Dominion legislation. In the field of fruits and vegetables the two main statutes are the Fruit, Vegetables and Honey Act and the Meat and Canned Foods Act and in each case the Regulations thereunder. In every instance where grades have been defined price control has been based on such grades. This covers all processed commodities and all fresh produce which has so far been made subject to price control.

Summary

Government wartime policy respecting fruits and vegetables has reflected successively: (1) the need for assistance for the apple industry, whose export markets were suddenly curtailed by the outbreak of war; (2) the undertaking to provide Britain and other allies (Newfoundland, British West Indies) with needed supplies, and the development of techniques such as dehydration to make this undertaking feasible under wartime shipping conditions; (3) the recognition of the scarcities which became apparent two or three years after the war's commencement, by imposition of maximum price regulations and payment of growers' and processors' subsidies associated with prevention of price rise and maintenance of supply for domestic and export requirements.

AGRICULTURAL POLICY: WARTIME EXPORTS

FRANK SHEFRIN

The war has operated in a number of ways in affecting the volume, value and direction of agricultural export trade. At first it was thought that the war might bring almost at once a greater demand for Canadian products. The actual result was quite different. There was, in fact, a reduction in the demand for certain products. One of the first problems Canada had to contend with was the development of a program to handle the apple crop. Accordingly, farmers were asked to continue producing as they had been doing.

The food position of the United Kingdom changed with the invasion of Norway, Denmark and the Low Countries and the intensification of submarine warfare. The extension of the war in the Pacific in the early part of 1942, brought other developments. Supplies available to the United Kingdom were further curtailed, resulting in an increased demand upon countries more accessible. It became necessary to draw upon Canada for more products and to feature those that were high in food value, relative to volume.

Although the number of countries with which Canada formerly traded was reduced by the spread of hostilities, the war opened up more extensive export markets for some of the products of Canadian farms. At the same time, Canada's exports in food and non-food farm products to the United Kingdom assumed greater importance.

Britain's imports of Canadian farm products were dependent upon the policy laid down by the British Government. This policy was subject continually to change as military events affected the position of the United Kingdom. A wide variety and range of factors also were taken into consideration including the supply of foreign exchange, the most effective use made of shipping space, the maintenance of an adequate diet, the availability of storage facilities in the United Kingdom, and so forth.

The principal Canadian farm products asked for by Britain apart from wheat, were: bacon and pork products, cheese and evaporated milk, eggs, processed fruits and vegetables, and recently beef and processed poultry. The demand was for concentrated foods of "protective" or "vitamin" classification since shortage of shipping precluded the forwarding of any but the most essential foodstuffs.

Administration of Exports.—During the war, to an increasing degree, the peace time procedure of operating through private trade channels has been abandoned in favour of inter-governmental agreements. Trade of those commodities going to Britain is now mainly controlled through Boards. The products have been going forward under long term contracts involving both quantity and price. The wartime economic controls, including direct participation on the part of government agencies in international trade, have been adopted solely as a means of furthering the war effort and not as instruments of commercial policy.

The Agricultural Supplies Board has the general responsibility of assuring supplies of Canadian farm products to meet commitments made to the United Kingdom, although the actual purchasing and forwarding of these supplies are the responsibility of the Meat Board, the Dairy Products Board and the Special Products Board. The Wheat Board, although not itself handling export orders, has negotiated contracts and facilitated the supplying of wheat purchased by the United Kingdom Ministry of Food. Through these Boards negotiations have been carried on for sale and delivery of the products to Britain. In several cases, the Boards were set up at the request of the British Ministry of Food. The Ministry expressed the desire to deal with a single agency.

Canadian export of agricultural products are co-ordinated under the Food Requirements Committee. The Committee is composed of representatives of the Departments of Agriculture, External Affairs, Finance, Fisheries, Trade and Commerce, Pensions and National Health, and the Wartime Prices and Trade Board. The Committee has to deal with questions of policy arising out of the need for co-ordinating Canada's export commitments to the United Nations, the domestic food needs, and other factors which must be taken into account to insure a balanced war effort. The Committee makes recommendations on matters concerning embargoes or other export and import restrictions of foodstuffs and all proposed agreements concerning external trade in food. These recommendations are made effective through the authority of the departments represented in the Committee.

In addition to the above Boards, Canada is jointly, with the United Kingdom and the United States, a member of the Combined Food Board. This agency is charged with the responsibility of directing United Nations Food supplies where most needed and assisting in developing adequate food production programs.

Export Control.—The Canadian wartime policy was not designed to send all food produced out of the country. The Agricultural Supplies Board, from its establishment on September 9, 1939, has been interested in the control of exports of such commodities as might be required in Canada for agricultural purposes. During the first 18 months of the war, control over exports were by individual Order in Council in each case. All this control was later co-ordinated under the Export Permit Branch. At the same time, as in the early days of the war, the Agricultural Supplies Board officials pass on all applications for permit to export any of the commodities which have been brought under export control on the Board's recommendations. The Foods Administration of the Wartime Prices and Trade Board also has supervision over the export of certain foodstuffs which are liable to affect the total of domestic supplies. Some of the many commodities which have come under control are: livestock feeds, live cattle, vegetables, hogs and dairy products, fibre flax, and so forth.

Dehydration and Processing.—Not only were there changes in the methods of handling the various farm products going overseas, but the form of product has changed. In order to conserve shipping space, containers and keeping quality, Great Britain turned more and more to the importation of processed foods such as dried eggs, dehydrated fruits and vegetables, canned pork loaf, canned ham loaf, and boneless beef. The wartime advantages of this method of processing are obvious.

Canada's Food Commitments to Great Britain.—Canada has succeeded in meeting the majority of requests that Britain has made for food products since the outbreak of war and in some cases has shipped more than was contracted. During 1944, total supplies of hog products, beef and eggs available for exports broke all previous records. Large quantities of dehydrated fruits and vegetables have been sent over annually. Limited amounts of butter, chicken and turkey have been shipped overseas.

The volume of exports of certain farm products during the four war years showed a definite increase over the five year period 1935-1939. Cheese exports jumped from the 1935-1939 average of almost 80 million pounds to 130 million pounds in 1943. The volume of trade in hog products during the same period rose from an average of 180 million pounds to a high of 587·4 million pounds in 1943. Egg exports showed a remarkable increase from an average of 1·4 million dozen to 41·1 million dozen in 1943. The total value of all Canadian farm products exported (raw, semi-manufactured and fully manufactured) rose from $257·7 million in 1938 to $697·7 million in 1943.

As regards fibre flax, Canada has an open contract with Britain for the duration of the war and for a specified number of years after the war. Britain has agreed to take a minimum of 50 per cent of Canada's total production of flax fibre, and the United States takes the balance less Canada's domestic requirements. Shipments of fibre flax to the United Kingdom rose from 30,110 cwt. in 1939 to 78,577 cwt. in 1943.

Shipments of vegetable and forage crop seeds were made to Great Britain in fairly large quantities. In order to assure supplies, upon order of the British Ministry of Food, production for specified vegetable seeds was contracted for with producers.

Prior to 1944, agreements for food shipments between Canada and the United Kingdom were for a one-year period. In 1944 agreements for bacon, cheese, eggs and beef covered a two year period; evaporated milk, fruits and vegetables are on a one year basis.

Post-war Agricultural Exports.—Efforts will be made to maintain Canada's export markets for farm products in the years to come. Should there be a contraction in the British market for Canadian produce in the years of peace, other outlets will be sought. New markets may be available in the liberated areas. The Dominion Parliament has taken action to meet the situation. The steps taken include the provision of export credits. These credits may be used to facilitate trade expansion, including additional outlets for farm products. An important feature of this Act dealing with export credits is that providing insurance against loss on export transactions involving Canadian produced goods.

During the first three years of the Act assistance may be given to governments of other countries to import Canadian products. The assistance may be in the form of (*a*) a guarantee of obligations, (*b*) a loan, (*c*) the purchase, acquisition or guarantee of securities of other countries, issued in payment of Canadian goods exported. The guarantees are limited to $200 million and loans and purchase of securities to $100 million.

Even a great expansion of domestic consumption of food in Canada is likely to leave us with substantial surpluses in certain agricultural commodities which Canada will want to export. On the maintenance of such exports will depend not only the prosperity of the farming population but, since the latter is closely related to the well-being of Canada as a whole, the economic status of the nation.

There is no doubt that international co-operation in the economic sphere—the United Nations Conference on Food and Agriculture, plans for an International Bank of Reconstruction and Development and for the stabilization of currency, and the establishment of the United Nations Relief and Rehabilitation Administration are hopeful signs on the post-war horizon—and "good will" among the nations could create an atmosphere very conducive to an expansion of world trade. Should such a development occur, Canada as an important exporting country, would benefit accordingly.

In the realm of nutrition there are also possibilities of marked developments. An improvement of dietary standards would redound to the benefit of all nations and not the least to those, including Canada that have surpluses of food to contribute. It is believed by many authorities that the consumption of the right kinds and quantities of food by people everywhere will do most to insure an expansion of trade and contribute to both the physical and economic well-being of people in all countries.

A CO-OPERATIVE CENTENARY

A. H. Turner[1]

Co-operative enterprise as a business institution may generally be distinguished from other types of enterprise by the fact that the control of the business rests equally with those who use its services. The need for such enterprise, one hundred years ago, impelled the Rochdale Pioneers to develop certain business principles and methods which still form the basis of the operation of co-operative enterprise. For more than one thousand years various business undertakings have been operated co-operatively, but modern co-operative business recognizes as its beginning the opening of the co-operative store in Rochdale, England, in 1844.

A co-operative may be described as an association of persons conducting its affairs along lines of recognized co-operative principles and methods with the common object of giving its members some service they need such as marketing, buying, or financing. There have been many co-operative associations organized for which there was actually little, or at least, only a temporary need. Usually these associations ceased operations when it became apparent that the members had no further need for the services rendered. The economic basis for any co-operative association is to reduce the ultimate cost of the service rendered and thus to elevate the plane or standard of living of the members by allowing them access to a greater number of services.

While most co-operative literature includes a substantial amount of ideology outside the economic sphere, this article will be confined principally to the economic aspects of co-operative organization both in Canada and abroad.

Some Principles and Methods of Co-operative Enterprise.—Up to the present, three broad economic reasons for the development of co-operative enterprise may be suggested:—

1. To operate a business where so-called private enterprise has failed to serve its customers satisfactorily.
2. To act as a brake or check on other types of business enterprise in various ways.
3. To operate new business where private or other enterprise does not feel there is sufficient need to take the risk, or where co-operative enterprise is generally considered to be better able to serve the needs of those who intend to use the business.

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Furthermore, business enterprise may be divided into three broad economic types, namely, private, co-operative, and government or state enterprise. Broad definitions of these types might include the following:—

(*a*) Private enterprise operates its business primarily in the interests of those who own it whether or not they patronize the business, and if they do contribute to the volume of business done, it is usually only a very small proportion of the total. The primary interest of the owners in private enterprise is the return on the capital invested and while the control may be widely or narrowly held it is usually in proportion to the voting shares of stock owned.

(*b*) Co-operative enterprise on the other hand operates its business primarily in the interests of its owners or members but in this case they are patrons or those whom the business serves. Most, if not all, of the business done by a co-operative is contributed by its owners or members. The general economic welfare of the members has also been the subject of study in most co-operatives in order that new services or improvements in existing services may be undertaken as the need becomes apparent. The control of a co-operative is usually based on the principle of one member one vote rather than on the basis of stock or share ownership.

(*c*) Government enterprise has been usually operative in fields of large or pioneer capital investment and in the field of business regulation. It has normally been undertaken in the interests of the society which it represents whether it be local, provincial, national or international in scope. A government may take a long-run view of the problem. In theory at any rate it has been generally considered that where the government undertakes the direction and operation of an enterprise it should be one of vital interest to the continued political and economic welfare of the whole community which it serves. Otherwise, the business is likely to be less successful economically. Many co-operative leaders see a definite function for co-operative enterprise even in states where government ownership is most prevalent since they claim that a co-operative business offers the essential requirements of individual freedom while still operating in the interests of the community and the group for which they are intended to serve.

In practice, the three types of enterprise listed above often overlap in their aims and objectives because, for example, many privately-owned businesses have attempted to improve the economic welfare of their customers. Co-operative leaders claim however that while interested private enterprise may permit as great economic efficiency and community welfare for a period, the people who use the services lack the assurance of stability and progress which they have under their own control, since a co-operative is principally interested in better servicing the economic needs of its members.

Some of the specific differences in principle or method of operation which usually characterize co-operative and private enterprise are as follows:—

1. Co-operative membership is usually open and voluntary for all those who wish to co-operate to obtain the service. Private enterprise is usually organized with as few having a voice in the control and operation of the business as is possible to obtain the required capital.
2. The control of co-operative organizations is vested in the equal responsibility of all members whether they have one dollar or one thousand dollars invested in the association. Each co-operative member has only one vote and cannot vote by proxy except under certain circumstances which are provided for in some provincial Acts. Private enterprise is usually subject to the control of those who own voting shares with each share having one vote which can normally be exercised by proxy.

3. Co-operatives are incorporated under special legislation or under special sections of the general corporation law, and usually retain the limited liability features of general corporation laws under which private companies are incorporated.
4. Co-operative shares or memberships, usually of small par value, are not for sale on the open market but are issued only upon application to the co-operative association. While all those who are interested in using the services of the co-operative may normally become members, the total investment of each is often limited as also is the rate of return on this capital. Private enterprise is usually organized on the basis of acquiring its necessary capital as quickly as possible, the shares of which may usually be bought and sold on the speculative or other market with unlimited returns offered in accordance with the type of investment.
5. In a co-operative business all excess charges above the actual cost of operation and statutory requirements are usually returnable to those who use the services in proportion to the value or volume of the services used. In private enterprise all profits obtained are usually returnable to the shareholders as a whole or to a portion of the shareholders in proportion to the value or number of ownership shares held.

Several other business principles and methods are common to co-operative enterprise which may or may not be present in private business namely—race, class and political neutrality; sales at prevailing market prices; sales for cash; education of members and the general public in co-operative principles and ideals; co-operation among co-operatives and extension of services by means of federations of co-operatives; and the elimination of labour difficulties to the greatest extent possible.

A general outline of any co-operative organization would include most of the principles and some of the methods of business operation previously indicated as being of a co-operative type. Modern co-operative business enterprise recognize the Rochdale Pioneers as the first co-operative association to successfully combine all the main principles and methods which have been described.

The Rochdale Pioneers.—The opening of a small co-operative store on December 21, 1844, in Toad Lane, Rochdale, England, will probably never have its complete social and economic significance evaluated. Although these pioneers were not the first to try co-operation in business nor the first to succeed in using certain of the principles and methods now generally adopted by the co-operative movement, the Rochdale Pioneers are generally recognized as the first to successfully combine most of these present day principles and practices in their business operation. This recognition is conceded to a greater or lesser extent by all types of co-operative activity whether marketing, purchasing, producer or consumer, although many marketing co-operatives are of the bargaining or agency type and do not give the same degree of recognition to the Rochdale Pioneers as do the purchasing and consumer co-operatives. However, all forms of co-operative development use some of the principles laid down by the Rochdale Pioneers as a basis for co-operative effort through mutual self-help.

The story is the simple one of 28 persons of various occupations, with the majority probably weavers, pooling their small resources of $140 to purchase limited supplies of certain necessities such as butter, sugar and flour for re-sale to themselves or any others who wished to become members of their organization. Their association was known as The Rochdale Society of Equitable Pioneers and at the start their store was open for business for only a few hours on two evenings a week. After a few months of operation, they were able to remain open every evening. Many people made fun of their efforts but at the end of the first year's operations they had done $3,500 worth of business and raised their membership to 74 with $900 capital. About seven years later they purchased a flour mill, then a shoe factory and then a cotton and woollen mill. In 1944 the Co-operative Wholesales of the British Isles have many factories, do hundreds of millions of dollars worth of business annually, and own sources, or equipment to facilitate the obtaining of food supplies for their members in many countries of the world. Such was the simple beginning of a world-wide co-operative development which owes a part if not all of its success to its devotion to the combination of co-operative business principles and methods introduced by the Rochdale Pioneers.

Co-operative Development Throughout the World.—While the groundwork of co-operative business principles and methods was laid in England, the development of these principles and the evolution of the co-operative movement have been carried on peacefully under a variety of conditions in almost every country of the world.

Information in a recent publication of the International Labour Office indicates that this authority has been able to trace the existence of more than 800,000 co-operative societies in 102 countries and territories under separate administration.[1] In another publication, the same authority lists 672 thousand of these associations with more than 60 million members as being rural or agricultural co-operatives and about 50 thousand associations with almost 60 million members as being co-operative societies which meet a general need among urban consumers for food, fuel, clothing and so forth.[2] Other groupings which include housing and urban credit co-operatives make up a balance of about 80 thousand associations with some 20 million members.

A further analysis in this same publication indicates the geographical location of these co-operative societies with the membership shown in brackets in millions—Africa, 3,598 ($\frac{1}{3}$); America, 51,251 (15); Asia (excluding Russia), 167,554 (15); Europe (excluding Russia), 300,323 (52); Russia, 286,595 (60); Oceania, 1,191 ($\frac{1}{2}$).

Co-operative leaders usually consider that just prior to World War II, co-operative membership for some one or other of the many economic needs for which a co-operative service has been developed extended to about one-quarter of the homes of the world. A world organization which has been developed to co-ordinate the ideas of this great group of people working together in the co-operative movement is known as the International Co-operative Alliance with headquarters in London, England. Prior to the war this international co-operative union had membership representation from about 40 countries and friendly relationships existed with co-operatives in all countries.

In some countries of the world co-operative activities have been more highly developed in the urban areas and among labour groups while in other countries co-operatives have developed to a greater extent among rural groups than in urban communities. The scope of this article will not allow consideration to be given to all countries but in Europe, the British and Swedish co-operative movements have been influenced to a great extent by urban development while the Danish movement is largely agricultural. Switzerland is often mentioned as the country which has developed co-operation among all groups and classes in approximately the same proportion.

In the United States there were in 1943 more than 10,000 agricultural marketing and purchasing associations doing an annual volume of business of nearly 4,000 million dollars.[3] In addition, there are more than 10,000 credit unions with assets of 400 million dollars serving principally the urban population. With the exception of housing co-operatives the other types of urban consumer co-operatives have not been numerous in the United States up to the present but increasing interest is now being shown by urban consumers in the purchase of goods, medical care, recreation, insurance and a number of other services on a co-operative basis.

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[1] The Co-operative Movement In the Americas, International Labour Office, Montreal, 1943.

[2] Co-operative Organizations and Post-War Relief, International Labour Office, Montreal, 1943.

[3] Statistics used by J. G. Knapp, Co-operative Research and Service Division of the Farm Credit Administration at Washington.

Co-operation has therefore not followed any regular pattern of development in the various countries of the world but with the exception of those countries where there has been suppression in whole or in part of democratic principles of government, co-operative business principles have been used to give some of the people a wide variety of services when there was an economic need for this type of organization.

Co-operation in Canada.[1]—Agricultural societies with co-operative features were operating in Canada towards the end of the eighteenth century but for the most part these early types of organization were unincorporated, informal, and mainly interested in the improvement of production methods rather than in undertaking formal business for their members. Some writers indicate that at about the same time the Rochdale Pioneers opened their store in England, a buying club was organized in Boston which may have had branches in Canada. However, co-operation as we think of it to-day in Canada dates from the organization of a co-operative store in Stellarton, Nova Scotia in 1861 and from the formation in Canada of branches of the American Grange shortly after 1870. Mutual fire insurance companies, co-operative cheese factories and creameries also had their start about this time.

Most of the development before 1900 was essentially local in character although, attempts which met with varying success, were made to get representatives of various local granges and other agricultural co-operatives together from time to time to discuss their common problems and ideas. With the knowledge and experience gained in operating their own businesses, a rapid extension of activities took place particularly in the co-operative marketing of agricultural products. This occurred after the organization of the great western grain co-operatives in the early part of the twentieth century. The United Fruit Companies of Nova Scotia, the Okanagan United Growers of British Columbia, the United Farmers' Co-operative Company of Ontario and the Co-operative Fédérée de Québec were among the larger co-operative organizations formed outside of the prairie Provinces. In 1900, a Canadian also founded the first credit union on the North American continent at Lévis, Quebec, and at the end of 1943 there were approximately 1,800 of such co-operative credit societies operating in Canada. While development of co-operative stores by urban consumers in Canada has not been extensive in terms of numbers, the highly successful British Canadian Co-operative was organized in 1906 at Sydney Mines, Nova Scotia. This co-operative after nearly forty years of operation is serving its members with goods having a value close to one and one-half million dollars annually. Urban consumer co-operation in Canada has in recent years shown a tendency to increase due in part to the depressing business and employment conditions in the thirties, in part to the spread of the services of rural purchasing co-operatives which have influenced the recognition of the place that co-operative purchasing can take in urban as well as in rural buying, and in part to increased consumer education with respect to requirements. Most of these recently organized co-operatives are operating successfully.

In the matter of services to their members Canadian co-operatives have extended their activities to almost every field of production and consumption as well as the complementary services which affect these items in our daily lives. Information obtained by the Economics Division of the Dominion Department of Agriculture indicates that the following number of co-operatives reported and were active in 1942-43 in the different fields of co-operative service, —dairy products, 446; fruits and vegetables, 161; grain and seed, 105; live stock, 225; poultry, 194; honey, 6; maple products, 7; tobacco, 10; wool, 7; fur, 2; lumber and wood, 7; food products, 518; clothing and home furnishings, 229; petroleum products and auto accessories, 500; feed, fertilizer and spray material, 625; machinery and equipment, 125; coal, wood and building material, 413; credit unions, 1,780; fishermen associations, 67; farm mutual fire insurance, 400; telephone service, 2,387; hospital care, 60; miscellaneous marketing, 14; miscellaneous merchandising, 535; as well as numerous community entertainment and recreation, bus transportation, home building, restaurant, rooming house, burial and funeral service and other types of co-operative association. While a complete classification of all types of co-operatives listed or operating in Canada has not yet been possible, the above grouping indicates a widespread development in many lines. Further, a number of the associations listed have many places of business and have province-wide or even interprovincial memberships in some cases. Many are now members of international co-operatives as well.

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[1] The Economics Division, with the assistance and co-operation of provincial gevernments and co-operative organizations, has maintained statistics of agricultural co-operation in Canada since 1932. With the co-operation of other government departments as well as co-operatives and provincial governments, this service has been recently extended to include statistics for all types of co-operative development in Canada. Most of the material included in this section is the result of information obtained by the Economics Division.

It is estimated that in 1942 grain co-operatives handled about 37 per cent of the grain received at country elevators in Canada and that all marketing co-operatives handled slightly more than 30 per cent of the main farm products entering commercial channels of trade. Furthermore, while it is difficult to make comparisons as readily in the purchasing or consumer type of co-operative, it is considered that less than 10 per cent of the total Canadian retail trade in consumer or farm supplies was handled co-operatively. However, in some lines such as fuel, petroleum, seed, fertilizer, and flour the proportion of the retail total might have been as high as 25 per cent for Canada and certainly was that high or higher in proportion to the retail trade in these products in some areas. In this connection the Saskatchewan Co-operative Wholesale have acquired ownership in a coal mine, the Consumers Co-operative Refinery started refining petroleum on a co-operative basis in 1934 and in the case of many food products such as fish, berries, dairy products and grain, co-operatives handle a proportion of these products through the complete process of marketing from the producer to the consumer.

Special co-operative legislation had been provided before World War II in the form of one or more Acts or special sections of Acts of Provincial Assemblies in all Canadian provinces. To date, no Dominion co-operative legislation has been enacted although several interprovincial co-operative organizations have been incorporated under the Dominion Companies Act. Unlike some countries such as Denmark practically all co-operative business enterprises in Canada are incorporated under statute.

The Co-operative Union of Canada was organized in 1909 to act as an educational and co-ordinating association for co-operatives throughout Canada. It has filled an important place in the development of many Canadian co-operatives and at present is in the process of re-organization in order that it may accept an increasingly important role in the co-ordination of all branches of the co-operative movement in Canada.

In this centenary year of world co-operative development, Canadians can look first to the period of informal community enterprise, then the organization of local co-operatives, next the formation of regional and province-wide co-operatives, and finally the stage of interprovincial, national and international development in the history of their co-operative movement. Some forms or types of co-operative enterprise in certain sections of Canada are just entering the earlier stages of this picture but all can look forward with the realization that Canadian co-operators have a valued background of experience from which to build in the future.

Conclusion.—As co-operatives travel further along the road of service to the people of the world, constant recognition of the need for new types of service may be expected to develop to form the basis of co-operative membership. Already in recent years co-operative leaders have stressed a systematic system of education in order to maintain the spirit of co-operative effort from generation to generation through periods of prosperity and distress. In the past hundred years co-operative business has met many obstacles resulting in many withdrawals from business for various reasons, although these withdrawals based on recent studies in the United States and Canada appear to be lessening and are probably not as numerous as those in similar types of private business enterprise, yet they pose a serious question for co-operative leaders as co-operative organizations tend to enlarge and contribute more of the services required by the members in their daily lives.

Plans are at present under way as the result of a recent international conference of co-operative leaders from some 20 countries to form co-operatives into international business associations. In addition co-operatives are preparing to assist in the post-war rehabilitation plans of most countries as well as to assist the United Nations Reconstruction and Rehabilitation Administration to carry out its plans.

Co-operative business is based on the application of a set of principles and methods which have stood the test of one hundred years of practical operation. It has given, and its continued progress depends on its continuing to give the people who use a service a voice in the business administration of that service or in other words allowing the people to have a say in the solution of their own business problems.

Many co-operative leaders feel that the development of co-operatives, along lines of sound business principles and practices such as those of the Rochdale Pioneers, by a sincere membership, offers a degree of individual freedom not possible under state ownership, but which still allows the members to proceed on a basis which gives them a larger degree of control of their own business problems than is at present possible under private ownership. If there is no recognized need there should be no co-operative.

FOOD HABITS[1]

Nutrition surveys indicate the existence of a considerable amount of malnutrition. In recent years biochemical and physiological research have been directed toward human nutrition and there is a considerable body of facts which can be drawn upon, but unless we, as individuals, adjust our food habits to changing knowledge, it is of little benefit to us. With this fact in mind, a committee was set up under the National Research Council to study the psychological and cultural food patterns of the peoples of the United States.

The Committee on Food Habits has collected existing information on food likes and dislikes resulting from differences in culture, behaviour and personal traits, and the possibilities of altering these likes and dislikes by educational means. The problem was, therefore, one of finding the most effective ways and means of adjusting habits to needs and of getting people to wish what they need. The program was broken down into the following sections: First, where are the major weaknesses in national dietary habits or what groups most need to be reached in a short range or long range program? Second, what are the major causes of such weaknesses and what should be gotten to the poor-diet groups to bring about improvements? Third, who are best equipped for undertaking the task of reaching the poor-diet groups? Fourth, by what procedures and media can such groups be most effectively reached? It was realized that the campaign must not only educate people to wish the proper changes in their diets but must establish the changes as habits and for that reason long range educational work must be emphasized.

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[1] From the report of the Committee on Food Habits, 1941-1943, Bulletin of the National Research Council, No. 108, October, 1943, Washington, D.C.

The theory has been advanced that "Why people eat what they eat" can be answered mainly by the solution to "how food comes to the table and why". In other words, food behaviour is determined to a considerable extent by the channel through which food comes to the table as well as by the ideology of the gatekeeper governing that channel. In the high, medium and low income Czech and Negro groups studied, it was found that the wife controlled all channels except that of gardening. Different income and cultural groups stressed different methods. Lockers were used by only the high income group. The lower income groups effected savings by canning more of the essential foods and by having more gardens. The Czech group proved to be more self-sufficient than any of the other groups. Thus, financial circumstances and cultural values do have an influence upon the extent to which various food channels are used and the uses to which they are put.

The psychological factors influencing the gatekeeper pertain to, first, what is considered "food for us" and, second, the system of values behind her choice. The first factor is illustrated by a farm girl in Iowa who refused to eat cottage cheese "because it is something for the pigs". Money, health, taste and status were the factors most frequently used in evaluating foods, the weights of which factors again varied with different income and racial groups. Furthermore, the relative weights of the various influences changed from day to day in line with changing needs, changing prices, availability of foods and other factors.

Further study of food patterns, among cultural groups reveals the necessity of specialized methods of nutrition education. The following illustrations indicate possible methods of approach to the different groups. The Italian tends to cling to his nutritional diet, even to the extent of ceasing to eat raw vegetables if oil is not available. To maintain his nutritional level, it is suggested that education in the use of food substitutes should involve the colour factor which is part of the aesthetic approach that Italians have toward food.

Studies of Central Europeans reveal some common characteristics and, therefore, it is assumed that they would respond to similar education methods. The Poles, Hungarians and Czechs, being well organized into nationality societies, would enjoy lectures on nutrition. It is suggested that since Poles came to the United States during a period of great industrial expansion, many Polish girls are employed in factories and nutritional appeals should be made to them in terms of good looks and charm through popular magazines. On the other hand, it is thought that the health approach would have greater appeal for the Hungarians and Czechs.

The impact of the war on local food habits illustrates that the habits are not merely a question of individual behaviour. Rationing is believed to have contributed to the improvement in the general level of nutrition in England and it is thought that the people's attitude to it determines to some extent whether the changes have temporary or permanent value. While the proposed emergency ration for liberated countries is limited by the facts that the foods must be highly nutritious, available in large amounts, compact, stable under adverse conditions and not too hard to eat, yet slight alterations made in the combination of foods and in seasoning are thought to determine to a great degree their usefulness in different countries.

Problems concerning food habits in Canada may differ slightly from problems in the United States; but in general, the principles of the problems are the same and the need for co-ordinated study of factors affecting food habits is essential to a program of applied nutrition.

FARM HOUSING

The Economics Division, Dominion Department of Agriculture is making a level of living study in Alberta. A preliminary analysis on farm housing in the Red Deer-Wetaskiwin district of Central Alberta reveals some interesting information. Since farming in this parkland region is usually considered to be representative of a relatively stabilized and well developed type of agriculture, it may be interesting to examine some of the findings in regard to the housing and home conveniences of these farm families.

The farm homes visited were rated by enumerators as in good, fair or poor condition; eighteen per cent were reported to be in poor condition, fifty-two per cent in fair condition and thirty per cent in good condition. Only three houses out of every ten were in good condition, yet the district compares rather favourably with many areas of Alberta and Saskatchewan.

The average number of rooms in these homes was 5·6. All farm homes of Alberta, according to the 1941 census, averaged 4·1 rooms. It should be noted in comparison, however, that homes of hired help, and one person households, excluded from the study, were included in the census. Three-quarters of the families in the sample had one room or more per person. While the number of rooms, without consideration of their size, is an imperfect indication of the adequacy of living space, it is probably correct to infer that overcrowding was not among the more pressing problems of most of the families visited.

Electric lighting was found in about fifteen per cent of the homes. The majority, sixty-two per cent, depended on some type of mantle lamp, such as an Aladdin or gas mantle lamp. More than a fifth owned only coal oil wick lamps. The typical heating unit was the coal or wood heater. However, thirty per cent had a furnace or some other central heating system.

There was a gas or electric washing machine in about three-fifths of the homes visited. Half of the remainder used hand-powered washers. One-fifth of the housewives were without equipment of either type.

Radios were common; these were found in ninety-three per cent of the homes. In ninety-two per cent of the homes there were sewing machines. Half of the homes were serviced with telephones. About two-fifths had some type of sink. Several other important facilities were rare, for example, running water, soft water cisterns, and sewage disposal by a septic tank or its equivalent. Proportions possessing these three ranged from one in ten to one in eight.

United States Wartime Agriculture

Since the outbreak of European hostilities in 1939, United States agricultural production and policy have been directly affected by the present war. Prior to the Lend-Lease agreements beginning March, 1941, there were large United Kingdom war needs for food produced in the United States which were met by normal purchase arrangements. With the introduction of Lend-Lease the impact of the European war on United States agriculture became more pronounced because of rapidly increasing demands for foodstuffs under this program.

During the first twelve months of Lend-Lease, the value of agricultural commodities supplied was 439 million dollars—during the third twelve-month period it had risen to one billion 875 millions of dollars.

After the entry of the United States into the war in December, 1941, food became one of the weapons brought under joint allied control. Agricultural production in the United States and in the United Kingdom and later Canada, became part of a common food pool as a result of the creation of the Combined Food Board. This agency was charged with the responsibility of directing United Nations food supplies where most needed and also of assisting in developing adequate food production programs.

In 1943 the agricultural program which was given to the farmers of the United States to help them plan their production to make the best possible contribution to the war effort was based on domestic and export war food needs. The over-all policy called for the greatest production that could be reached.

Besides calling for maximum production, it was necessary to plan for, and direct, certain shifts in production to meet developments which placed new demands on United States agriculture. These included: food needs of the United States military and Lend-Lease; loss of certain imports, such as vegetable oils and rice; increased civilian buying power.

It was agreed that the food needs of the men and women in the services should have first call on available food supplies. Under conditions of military diet, these people not only eat more than they did in civilian life, on the average, but they also are fed greater quantities of the so-called "protective foods", such as meat, milk and dairy products, eggs, fruits and vegetables. Therefore, the 1943 agricultural program had to take this new feature into consideration, as well as make provision for growing Lend-Lease food requirements.

During 1943 the feed grain situation became extremely tight due to the rapid increase in the number of animal units on farms. As a result substantial quantities of Canadian feed grains and wheat had to be imported. The hog-corn ratio contributed to the retention of corn on farms for feeding and as a result a severe shortage developed in the supply for industrial uses. The 1944 goal for corn was set at 100 million acres or about 8 million more than the five year pre-war average, while for wheat a national objective of 68 million acres was suggested.

One of the major import losses due to the war was in oils and oil seeds. By 1943 United States farmers had made rapid adjustments to meet this deficiency. Over the pre-war average, soybean acreage was up 157 per cent, flaxseed 115 per cent and peanuts 200 per cent.

In order to provide food supplies for liberated countries, crops such as dried beans and peas are receiving emphasis. The 1944 goal for dried beans in the United States is 3·3 million acres and for dried peas 875,000 acres.

Civilian consumption has risen rapidly during the war, even with the rationing measures undertaken. The nature of the dairy business prevents any rapid expansion of milk production but milk production for 1943 was up about 11 billion pounds over the pre-war average of 107·9 billion pounds although it did not reach the goal of 122 billion pounds.

The United States production goals program is much the same as the agricultural objectives which have been set up for Canadian farmers. In the first place, estimates are made of the amount of food needed by civilians, by the military, by industry and for Lend-Lease. These needs are then reviewed in the light of anticipated production capacity, which considers labour and machinery supplies, the availability of fertilizers and pesticides, and other production necessities. The goals are then worked out with the idea of providing, as far as capacity and nature will allow, the amounts of food needed.

In 1943 the County War Boards took an active part in the farm mobilization program asked for by President Roosevelt. The mobilization campaign began with four regional meetings to discuss the agricultural goals for 1943. The program was carried from these regional meetings to the United States Department of Agriculture State War Boards to work out goals for the individual counties. In turn, the County War Boards were informed of the importance of planning the county goals with the co-operation of every farm home in the county. So the planning for agriculture, undertaken by the Department of Agriculture in co-operation with State and farm groups, is re-divided by stages until it comes right down to the individual farmer.

To compensate for the loss of an estimated 4 million experienced and able-bodied men, American farmers have increased their working hours. This has meant more family labour, use of older men and inexperienced help. Farmers have used foreign workers, prisoners of war, troops, and other special sources of labour. They have shared labour, machinery, and other facilities with neighbours to a greater extent than in pre-war years and devised many ingenious ways of saving labour.

NOTES

In Australia, at present, all agricultural production goals are set by the Production Executive of Federal Cabinet, following recommendations from the Production Goals Committee. This Committee is chaired by the Department of War Organization of Industry, and has representation from the Commonwealth Food Control, the Manpower Directorate, the Prices Commission, the Rationing Commission, the Ministry of Post-War Reconstruction and the Bureau of Census and Statistics. In making recommendations to Production Executive, the Committee is thus able to give due consideration to all relevant aspects, such as manpower, price and post-war possibilities. Furthermore, since close contact is maintained with State Departments of Agriculture, the State targets formulated are kept in appropriate relationship with State production capacities. Frequently, indeed, tentative goals are sent out to the States for their comments before a recommendation is sent to Production Executive.

Commercial production of fibre flax in Canada in 1944 covers about 40,000 acres and has an estimated value of four million dollars.

Most of this fibre goes to Britain where it is spun into thread and yarn for the manufacture of parachute cords, collision mats, coverings for guns and airplanes, and other essential products. Even the comparatively small amount remaining in Canada has its manufacture restricted to wartime uses.

The Secretary of Agriculture on May 5, 1944 announced that agriculturally based communities wishing aid in planning post-war jobs can obtain assistance from the Department of Agriculture. The aid available to the communities will consist primarily of the services of the department technical consultants. The consultants, whose services the communities may request, will include engineers, agricultural economists, statisticians, marketing experts and economists. These consultants will be available to aid community leaders who are setting up their own local studies of post-war conditions in analysing the prospective employment situation in the community in appraising industries that may be expanded or developed locally and in developing steps to establish additional sources of employment where needed. The consultants will not themselves make the post-war plans for the communities.

The work will be carried on by the community itself at its own expense except that the services of the government technicians will be made available as consultants to the committees of local leaders to provide them with specialized and technical aids and suggestions in appraising the post-war problem and in deciding how to best deal with it.

British plans for expanding export trade and for raising living standards after the war emphasize the need for maintaining a balance between industry and agriculture. The report of Lord Justice Scott's Committee assumes that the British Government will maintain a "healthy" and well balanced agriculture after the war without saying what that implies—the Minister of Agriculture has informed the British farmers that they will have an assured market for their products until 1945.

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A REVIEW OF AGRICULTURAL BUSINESS

ISSUED QUARTERLY BY THE ECONOMICS DIVISION
MARKETING SERVICE
DEPARTMENT OF AGRICULTURE, OTTAWA

Published by Authority of the Hon. James G. Gardiner
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THE ECONOMIC SITUATION

Although slight recessions occurred in a few lines of business operations in the final months of 1944, for the year as a whole economic activity reached the highest level on record. Output of war materials was still continuing at a high rate at the close of the year, with reconversion from war to civilian production deferred by intensification of hostilities on the fighting fronts.

During the first 11 months of 1944 the index of the physical volume of business averaged 237·2 or one per cent higher than in the same period of 1943, although the standing in November at 237·9 was somewhat lower than the index of 247·0 for January, 1944. The level of wholesale prices has been comparatively steady since October, 1943, although the average for the first 11 months of 1944 was 2·8 per cent higher than in the same period of 1943.

The preliminary estimate of the national income for 11 months of 1944 shows a total of $8·4 billions, compared with $7·9 billions in the same period of the previous year, an increase of over 6 per cent. It is now certain that total national income for 1944 will easily exceed the record figure of $8·7 billions in 1943. Gross value of principal farm crops in 1944 is estimated at $1,319 millions, $185 millions higher than in 1943 and $140 millions above the previous record in 1942. On the 1935-39 base, the index of grain and live stock marketings in the first 11 months of 1944 averaged 206·0, which was 32 per cent higher than for the same period of the previous year.

External trade continued at extremely high levels in 1944. The value of exports for the January-November period totalled $3·2 billions, representing an increase of 19·3 per cent over the value of exports for the first 11 months of 1943. Excluding trade in gold, the active trade balance for 11 months was nearly $1·6 billions, or 44·6 per cent greater than in the corresponding period of the previous year.

Prices.—With wartime price control continuing to function, no great change occurred in the general wholesale price index throughout 1944. Opening at 102·5 for January the index reached a wartime high of 103·0 in March and thereafter eased off gradually to 102·4 at the close of the year. Prices for Canadian farm products also failed to record a further general advance during 1944. For December, 1944, the index for field products was 92·2 for animal products 122·0 and for all farm commodities 103·3 compared with 92·1, 123·8 and 104·0 respectively, for January, 1944.

The official cost-of-living index at December 1 stood at 118·5. This was ·9 points lower than at November 1, 1943, and ·7 points lower than the maximum point recorded in 1944, which was 119·2 at May 1. Compared with August 1, 1939, the wartime increase in the index up to December 1, 1944, revealed an advance in living costs of 17·6 per cent. Among the components of the cost-of-living, rent, clothing, fuel and lighting were the only items to show slight advances in December since the first of the year.

ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Living Costs and Production Indexes Computed by Dominion Bureau of Statistics: Index of Industrial Wage Rates Published by Department of Labour

Year	Wholesale Prices 1926=100				Cost of Living 1935–39=100		Commodities and Services used by Farmers, 1935–39=100		Production
	All commodities (1)	Farm products (2)	Field products (3)	Animal products (4)	Urban Living Costs (5)	Farm Living Costs (6)	Eight Factors (7)	Eleven Factors (8)	Physical volume of business (9)
1913....	64·0	64·1	56·4	77·0	79·7	79·6	....	....	....
1914....	65·5	70·2	65·4	78·3	80·0	82·0	....	....	....
1915....	70·4	77·9	76·9	79·5	81·6	86·3	....	....	....
1916....	84·3	89·8	88·8	91·4	88·3	93·6	....	....	....
1917....	114·3	128·5	134·5	118·4	104·5	111·6	....	....	....
1918....	127·4	132·6	132·0	133·6	118·3	131·4	....	....	....
1919....	134·0	146·7	142·6	153·5	130·0	143·0	....	....	62·3
1920....	155·9	160·6	166·5	150·8	150·5	170·7	....	....	65·9
1921....	110·0	103·7	100·3	109·5	132·5	139·5	....	....	58·1
1922....	97·3	88·0	81·4	99·0	121·3	127·5	126·9	133·2	69·1
1923....	98·0	81·5	73·3	95·1	121·7	127·9	118·7	128·7	74·7
1924....	99·4	88·1	82·7	97·2	119·5	125·1	122·5	132·6	73·9
1925....	102·6	101·0	98·2	105·6	120·6	123·6	124·3	131·8	79·4
1926....	100·0	100·0	100·0	100·0	121·8	120·9	120·6	129·3	87·3
1927....	97·7	102·1	99·9	105·7	119·9	119·5	120·9	130·1	92·7
1928....	96·4	100·7	92·6	114·3	120·5	118·3	119·4	128·2	102·4
1929....	95·6	100·8	93·8	112·5	121·7	117·4	118·4	127·5	109·6
1930....	86·6	82·3	70·0	102·9	120·8	113·7	105·7	116·3	95·6
1931....	72·1	56·3	43·6	77·6	109·1	103·7	91·8	100·8	81·7
1932....	66·7	48·4	41·1	60·7	99·0	97·7	88·7	93·4	68·7
1933....	67·1	51·0	54·8	59·7	94·4	95·7	88·4	90·0	69·6
1934....	71·6	59·0	53·8	67·7	95·7	97·8	96·8	96·0	82·2
1935....	72·1	63·5	57·3	74·0	96·2	97·9	95·6	96·0	89·4
1936....	74·6	69·4	65·8	75·3	98·1	98·3	98·4	98·0	98·0
1937....	84·6	87·1	88·3	85·0	101·2	102·9	108·5	105·4	107·2
1938....	78·6	73·6	69·0	81·3	102·2	102·0	101·1	101·5	98·6
1939....	75·4	64·3	54·2	81·2	101·5	99·5	96·1	99·1	106·9
1940....	82·9	67·1	55·9	85·2	105·6	108·6	102·3	105·7	124·3
1941....	89·9	71·2	56·5	95·8	111·8	114·2	108·2	114·1	165·0
1942....	95·6	82·5	66·5	109·2	116·8	119·2	119·7	128·0	202·2
1943....	99·9	95·9	81·6	119·9	118·4	121·7	122·4	136·0	235·9
1943									
Aug....	100·4	97·5	84·9	118·6	119·2	122·0	123·1	138·9	241·0
Sept....	101·2	97·9	86·1	117·6	119·4	....	....	....	236·7
Oct.....	101·9	103·6	90·8	125·0	119·5	....	....	....	239·5
Nov....	102·4	104·2	91·3	125·7	119·4	....	....	....	242·9
Dec....	102·5	104·6	91·7	126·1	119·3	....	....	....	248·8
1944									
Jan.....	102·5	104·0	92·1	123·8	119·0	122·7	125·5	135·7	247·0
Feb....	102·7	104·3	92·5	124·1	118·9	....	....	....	241·6
Mar....	103·0	104·5	93·0	123·7	119·0	....	....	....	247·8
April...	102·9	104·0	92·4	123·4	119·1	123·0	125·8	139·5	239·5
May...	102·5	101·8	91·2	119·6	119·2	....	....	....	236·0
June....	102·5	102·0	91·1	120·2	119·0	....	....	....	238·8
July....	102·5	102·0	91·8	119·0	119·0	....	....	....	232·2
Aug....	102·3	101·2	91·2	117·9	118·9	122·6	128·8	141·3	233·1
Sept....	102·3	101·0	91·0	117·8	118·8	....	....	....	....
Oct.....	102·4	103·0	91·6	122·0	118·6	....	....	....	228·0
Nov....	102·4	103·1	91·5	122·5	118·9	....	....	....	227·9
Dec....	102·5	103·3	92·2	122·0	118·5	....	....	....	233·0

1. See Prices and Price Indexes 1913-1928, pp. 19–21, 270-289 and 1913-1939, p. 17.
2. Wholesale prices of Canadian products of farm origin only. See Prices and Price Indexes 1913-1937 p. 52, and Monthly Mineographs 1943-44.
3. Wholesale prices of grain, fruits and vegetables.
4. Wholesale prices of animals and animal products.
5. See An Official Cost of Living Index for Canada, 1940.
6. Price Index Numbers of Commodities and Services used by Farmers (Revised Mimeograph).
7. Ibid 6. Includes prices of commodities in eight groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.
8. Ibid 6. Includes the eight commodities indicated above plus tax, interest and farm wage rates.
9. Monthly Review of Business Statistics, p. 8 and Monthly Indexes of the Physical Volume of Business in Canada, supplement to the Monthly Review of Business Statistics November, 1932. Yearly index numbers for 1943, subject to revision.

Business Activity.—In comparison with the previous year, most economic indexes recorded the greatest gains during the first half of 1944, and in some cases minor recessions were experienced during the closing months of the year. The manufacturing index for November, for example, stood at 284·7 compared with 303·5 in January, and the wartime peak of 308·4 reached in December, 1943.

Commodity distribution proceeded at a substantial rate in 1944. The index of retail sales, on the 1935-39 base, reached 190·7 in November, compared with 182·6 in October and 172·8 in November, 1943. The seasonally adjusted general sales index reached a new peak of 182·1 in November compared with 165·0 in November a year ago. Except for radio and electrical stores, all other types of retail businesses reported a higher dollar volume of trade in November than at the same date the year before. In the case of wholesale sales, increases were common to all parts of the Dominion, and for 11 months the aggregate volume showed an 11 per cent increase over the corresponding period of 1943.

The general index of employment at November 1 (1926 = 100) was 183·8 compared with 183·3 at October 1, and 188·7 at November 1, 1943. However, it marked the seventh successive monthly decline in employment in manufacturing industries. During the war years, there has been a contra-seasonal employment increase at the beginning of November. The index of aggregate weekly payrolls for firms in eight leading industries reporting at November 1, stood at 151·0, compared with 152·0 a year previous. Per capita weekly earnings, averaging $32.29 at November 1, 1944, were slightly higher than the average of $31.60 at November 1, 1943.

Production of Live Stock and Live Stock Products.—Live stock and meat production in Canada during 1944 exceeded any previous year. Slaughterings of live stock at inspected establishments included 8,766,000 hogs, a 24 per cent increase over 1943, 1,354,000 cattle, 33 per cent more than in 1943; 656,000 calves, 10 per cent higher than in 1943; and 959,000 sheep and lambs, or 8 per cent more than in the previous year. As a result, the 1944 output from meat packing establishments was the greatest on record.

The production of creamery butter in 1944 totalled slightly over 298 million pounds, which was about 14 million pounds less than in 1943. Cheddar cheese production, on the other hand, totalling nearly 176 million pounds in 1944 showed an increase of about 14 million pounds. In the case of concentrated whole milk products, 1944 production of evaporated whole milk, condensed whole milk and whole milk powder was about 8 million pounds greater than in 1943. Total whole milk production for the year, estimated at approximately 17·6 billion pounds, was practically unchanged from 1942 and 1943.

As in the case of meats, production of eggs and poultry meats also reached record levels in 1944. Preliminary estimates show an increase of about 42 million dozen or 13 per cent in total egg production, while for poultry meats the increase is estimated at about 29 million pounds, or 10 per cent.

Canning Crops.—Substantially higher quantities of fruit and vegetables were canned by commercial canning factories in 1944 than in 1943. Statistics of the packs of the more popular fruits and vegetables for 1944 with the 1943 figures in brackets follow: peaches 550,000 cases (172,000); pears, 415,000 (413,000); plums, 302,000 (174,000); cherries, 106,000 (59,000); apricots, 93,000 (17,000); apple juice fortified with Vitamin C, 600,000 (150,000); tomato juice, 3,915,000 (2,215,000); tomatoes, 2,155,000 (1,502,000); peas, 3,565,000 (1,856,000); corn, 1,858,000 (1,159,000); beans, green and wax, 1,139,000 (772,000); pumpkin, 500,000 (259,000); spinach, 40,000 (33,000). A case contains 24 twenty-ounce tins. While the commercial pack of peas last year was the largest on record, approximately 60 per cent of the pack was of standard quality. This was due to the prolonged dry period during the growing season. A substantial part of the 1944 pack of tomato juice graded fancy or top quality.

THE 1945 AGRICULTURAL PROGRAM

Recommendations to assist farmers in working out their 1945 production programs were discussed in detail at a Dominion-Provincial conference held in Ottawa, December 4, 5, 6, 1944. This was similar to the previous annual conferences assembled at the invitation of the Agricultural Supplies Board. For 1945, it has not been assumed that the over-all farm output can be greatly expanded, in view of the labour situation and other factors. However, it is possible, and desirable, to give more stress to commodities most urgently required.

At the conference, probably the keenest discussion and most emphasis was given to the recommendations for wheat, hogs and dairy products. In the case of wheat, the recommendation is for a decrease rather than an increase in acreage in 1945, but in the case of hogs and dairy products, production at least as large as in 1944 is desirable. A detailed statement was issued to the press following the conference showing the levels of production recommended or estimated for each commodity, in comparison with 1944 production. The following is a summary of the main details of the program.

Grain and Forage Crops.—As in the case of 1944, considerable discussion revolved around prospective wheat acreage. On the basis of the statistical position with regard to wheat supplies, the conference reached almost unanimous agreement that an increase in wheat acreage in Canada would not be a desirable trend for 1945. The acreage recommended is 21·5 million acres, a reduction of a little over 2 million acres compared to last year. At the same time, it is recommended that summerfallow acreage in the Prairie Provinces be held at a minimum of 20·0 million acres. For all Canada, 16·0 million acres in oats, a 12 per cent increase, and 8·0 million acres in barley, a 10 per cent increase, is considered desirable in view of requirements for livestock feeding. Maintenance of acreage in mixed grains, hay and clover and alfalfa at 1944 levels is recommended, while for rye, plantings of 500,000 acres, a 23 per cent decrease from 1944 are considered adequate.

Meat Animals.—In the opening address of the Conference, the Dominion Minister of Agriculture, Honourable James G. Gardiner, announced that export agreements for bacon and beef with the United Kingdom were being extended to the end of 1946. The British Food Ministry had previously indicated that all surplus bacon and beef over and above minimum commitments would be welcome in 1945. Marketings of all kinds of livestock except hogs will likely be larger in 1945 than the previous year, and the recommendation is that hog producers be encouraged to maintain production in order that shipments of at least 600 million pounds of export bacon may go forward in 1945. It is estimated that beef cattle slaughterings may be about 100,000 head greater than the record 1944 total of 1,354,000 head, while calf slaughterings may also show an increase of about 10 per cent and sheep and lambs may also be slightly higher. Whether total meat production will equal or exceed the 1944 figure of over 2·5 billion pounds depends largely on the output of pork products.

Dairy Products.—Total milk production in 1944 is estimated at 17·6 billion pounds, and on the basis of estimated requirements for fluid milk, cheese, butter and concentrated milk products, production must not only be maintained in 1945 but an increase in total milk production to 18·1 billion pounds would be highly desirable. Dairy farmers are particularly affected by the tight manpower situation, but considerable emphasis was given at the conference to the continuing need for dairy products in the war and post-war period. If the recommended output of milk is achieved a little more milk would be available for fluid consumption, creamery butter production could be increased by about 5 per cent, and the production of cheese, evaporated whole milk, whole milk powder and skim-milk powder could be maintained. A slight decrease is provided for in the case of condensed whole milk.

Eggs and Poultry.—As in the case of hogs, poultry numbers have been rapidly expanded during wartime, leading to a record output of eggs and poultry meats and a phenomenal increase in exports. There is an assured export outlet for all surplus eggs at least till the end of 1945 and numbers of laying birds now on farms, indicate an increase in egg production during this year. There was considerable discussion at the conference as to whether any further expansion in the poultry industry should be encouraged in the spring of 1945. The consensus of opinion now seems to be that greater efficiency is desirable at this stage rather than any further great increase in poultry numbers.

Fruits and Vegetables.—Since the size of fruit and vegetable crops are determined in considerable degree by nature, in most cases estimates of probable production, rather than recommended output, are presented in 1945. Demand for fresh fruit continues good, and with a smaller apple crop probable in 1945, the varying increases estimated for pears, cherries, plums, prunes, strawberries, raspberries and loganberries should find a ready market. Crops of peaches, grapes and apricots may be a little smaller than bumper 1944 crops.

In the case of vegetables, an expected good demand for fresh vegetables is to some extent offset by a probable decrease in dehydration requirements. More canning beans and corn would be desirable in 1945, but slightly less canning tomatoes and peas. The recommended potato crop for 1945 of about 72 million bushels, could, on the basis of average yields for recent seasons be produced on a slightly smaller acreage than was planted in 1944.

Oilseed Crops.—A considerable demand for oilseed crops still continues. Production of flaxseed, the main oilseed, slumped sharply in 1944 and apparently there is a market for a much larger crop in 1945. A definite recommendation was not decided upon at the conference but it is expected that an announcement will be made prior to the planting season. The recommended acreages for sunflowers (28,000 acres), Argentine rape (20,000 acres) and soybeans (40,000 acres) all represent increases over 1944.

Other Special Crops.—Other specialized crops, mainly grown in southwestern Ontario, for which increases are recommended in 1945 include dried beans (26 per cent), husking corn (30 per cent), sugar beets (20 per cent) and tobacco. For the various types of tobacco, increases are recommended as follows: flue-cured 20 per cent, burley 33 per cent, cigar leaf 46 per cent, dark 35 per cent, and pipe 7 per cent. For dried peas about the same acreage as in 1944 (83,600 acres) is suggested for 1945.

Seed Crops.—Increased production of practically all hay and pasture seeds is recommended for 1945, particularly alfalfa, alsike and red clover seed. For sweet clover seed and brome grass seed, however, decreases of 38 per cent and 25 per cent respectively, are suggested. Production of vegetable and field root seeds, a matter of extreme urgency earlier in the war, has now reached satisfactory levels, and the 1945-46 recommendations, although mainly indicating increases, do include a few decreases.

Other Miscellaneous Products.—For maple products, 1944, production totalled a little over 3·0 million gallons, on a syrup basis, and it is estimated that in 1945 it may decline to about 2·7 million gallons due to the dry fall. The recommended production of honey for next season is 36·6 million pounds, or about the same as in 1944, and no further increase in the number of colonies is advised.

The estimated production of wool for 1945 is 15·5 million pounds or about 2 per cent larger than 1944. The conference did not discuss a recommendation for fibre flax, due to insufficient information as yet on 1945 requirements. With respect to horses, in view of the surplus horse population in certain parts of Canada, and the trend to mechanized farming, horse breeders are advised to concentrate on the production of desirable and useful types only.

A RECORD YEAR OF MEAT PRODUCTION

H. K. Leckie

Production of meat in Canada, on the increase since war broke out, reached record levels in 1944. Slaughterings of both hogs and beef cattle, the major meat animals, were the largest in history, while output of veal and lamb was also very substantial. Supplementing production from meat animals was a record supply of poultry meats.

The total meat supply in 1944 is estimated at a little over 2·5 billion pounds, of which nearly 1·9 billion pounds represents the output from inspected establishments. This is over 300 million pounds greater than in 1943, and close to double pre-war figures. Inspected slaughterings of hogs in 1944, totalling 8,766,000 head, easily eclipsed the former 1943 record by 25 per cent, and new records were established for weekly, monthly and quarterly totals as well. A similar situation occured in the case of beef cattle. Total inspected slaughterings of beef cattle, 1,354,000 head, were by far the largest on record, and as in the case of hogs new record weekly and monthly slaughterings were achieved. It was the first half of the year, however, in which hog production records were broken, but with cattle peak slaughterings did not occur until the latter half.

The record volume of live stock which farmers sent to market in 1944 placed considerable stress on handling facilities. During peak runs packing plant facilities, already considerably enlarged during wartime, were strained to the utmost to slaughter, process, chill, store and distribute the numbers of live stock available. Transportation and cold storage facilities, stockyards, and other agencies concerned with the live stock and meat trade were also utilized to capacity.

Although the output of meats in 1944 was the largest in history, there was no surplus. Under the terms of export agreements with the United Kingdom, substantial quantities of bacon and beef were shipped overseas, and at the same time domestic per capita consumption of meat soared to new high levels.

Live Stock Marketings.—During the first quarter of 1944 hog slaughterings exceeded all expectations, and cattle slaughterings continued to be substantial. As a result, not only did the Meat Board handle substantial quantities of export bacon, but an ever-mounting volume of frozen beef. In view of the plentiful supply of meats, meat rationing, introduced in May, 1943, was suspended at the end of February, 1944.

In the second quarter, both hog and cattle slaughterings remained heavy, although not quite equal to the first three months. In the latter half of the year, hog marketings began to lose ground rapidly in comparison with 1943, but cattle marketings showed the opposite trend. The following table indicates what occurred.

TABLE 1.—INSPECTED SLAUGHTERINGS OF HOGS AND CATTLE AND PURCHASES OF BACON AND BEEF FOR EXPORT, 1944

—	Inspected Slaughterings				Export Purchases	
	Hogs		Cattle		Bacon	Beef
	No.	% of 1943	No.	% of 1943	000 lb.	000 lb.
First Quarter	2,824,641	174	287,619	139	243,114	14,255
Second Quarter	2,314,221	138	283,356	118	181,019	32,857
Third Quarter	1,420,989	103	336,757	123	66,270	19,160
Fourth Quarter	2,206,479	89	446,426	148	159,672	64,883
Total	8,766,330	123	1,354,158	133	650,075	131,155

Hog marketing presented a considerable handling problem during the fall and winter of 1943-44. A new record was established the first week of February, 1944, when over 237,000 head were slaughtered, more than double the pre-war figure. The most severe congestion of stock yards and packing plants occurred in Western Canada and to ease this situation approximately 165,000 live hogs were moved from the West to Eastern abattoirs for slaughter in the period from the last week in November, 1943, to the middle of February, 1944. To encourage this movement and equalize returns to western shippers, a subsidy of 50 cents per 100 pounds, dressed weight, was paid by the Dominion Government.

In the fall of 1944 hog runs failed to reach the levels of 1943, and presented no particular handling problems. However, cattle marketings were considerably in excess of estimates. The greatest congestion was experienced in Eastern Canada at the Toronto market, although in some weeks western cities also experienced very heavy runs. A complicating factor was the high percentage of plain and unfinished cattle and cows, necessitating boning-out in preparation for export freezing.

Packing Plant Labour.—A serious manpower shortage began to develop in the packing industry commencing in the fall of 1943. Prior to the war, packing plant capacity had been considerably in excess of current requirements, but this slack was gradually taken up during the first three years of the war. By the addition of extra curing cellars, chilling and storage facilities, the elimination of bottlenecks, and so forth, exporting plants had further extended their capacity so that in 1944 an adequate labour supply was the principal limiting factor. When a rapid and unprecedented seasonal increase in hog marketings got under way in the fall of 1943, packing houses found themselves hard pressed to expand their slaughterings at an equal rate. There had been a considerable loss of skilled and semi-skilled labour to other industries and the armed services. This was not easily replaceable, and extra seasonal labour normally taken on in the fall was not available till farm harvesting operations were completed. However, through the co-operation of National Selective Service, provincial governments, local committees and other agencies a sufficient working force was built up to process a record volume of meats. Another critical labour situation developed in the fall of 1944, but on the basis of the experience gained in coping with a similar problem the year previous, the emergency was met. By December 1, 1944, the number of employees in packing plants throughout the Dominion totalled 18,885. This was 3,000 more than six weeks previously, and nearly 2,800 more than at December 1, 1943. However, a considerable proportion represented men or women new to the industry.

Cold Storage Facilities.—In connection with bacon export operations, the Meat Board requires considerable cold storage space to even out shipments throughout the year. The practice is to freeze and store fresh wiltshires during the periods of heaviest production and to defrost and cure this product in the summer when current production is light. As minimum commitments under the various bacon agreements have been stepped up, storage requirements have also increased. In 1944 the development of a substantial export business in frozen beef greatly extended freezer space requirements. In the pre-war period surplus beef cattle were normally exported on the hoof and thus beef storage was mainly for domestic purposes. As a result the beef export operations of the Meat Board placed entirely new demands on cold storage facilities in packing plants and public storage warehouses. As in the case of meats, greatly increased storage space was needed for eggs and poultry meats in addition to the requirements for cheese and butter, fish, fruits and vegetables, and other perishable commodities.

Prior to the war considerable excess cold storage capacity existed in Canada. This was gradually taken up, however, and it soon became necessary to use existing space to full capacity and to install extra freezing and storage facilities.

The manpower situation also affected the cold storage industry. In order to utilize warehouses to capacity, it is essential to have sufficient labour to move commodities promptly in and out of storage. Towards the end of July, 1944, a Cold Storage Administrator was appointed to deal with problems confronting the industry and to co-ordinate the storage programs for various export and domestic commodities.

In spite of the unprecedented volume of export bacon production in the early months of 1944, the quantity of fresh wiltshires and cuts stored was only slightly in excess of 24 million pounds. This proved later on to be inadequate to maintain export shipments at the desired level in view of the seasonal decline in summer bacon production. However, to conserve cold storage space and with the concurrence of the British Ministry of Food, seaboard deliveries of export bacon were maintained at a very high level during the first quarter of 1944, during the time hog slaughterings were at their peak—usually the period of heaviest into-storage movements.

Meat Board Operations.—Reconstituted in June, 1943, from the former Bacon Board and empowered to handle the export of other meats in addition to pork products, the Meat Board was just getting started in the beef export business as 1943 ended. Thus at the beginning of 1944 the Board was commencing deliveries under a two-year bacon agreement calling for minimum shipments of 900 million pounds of bacon in 1944-45, a beef agreement specifying not less than 50 million pounds of beef in 1944, and a number of supplementary contracts for pork offals, canned pork and hog casings. With the removal of restrictions on the domestic sale of pork products in November, 1943, and the suspension of meat rationing at the end of the first two months of 1944, domestic consumption of meats was free from restrictions for the major portion of the past year. The only exception was a six-week period commencing October 9th when exporting plants were asked by the Board to make a special effort to process a higher percentage of total production as export bacon.

The quantities of various pork products delivered by the Meat Board to the British Ministry of Food under the various agreements are indicated in table 2. The seaboard value of all products delivered up to the end of 1944 runs close to $600 million, with export bacon the major item. In 1944 not only did substantial export beef shipments develop, but shipments of canned pork and lard were on a considerably larger scale than ever before, and there were some shipments of frozen mutton and lamb.

The export price of bacon as provided in the 1944-45 Agreement, remained unchanged at $22.50 per 100 pounds for Grade A wiltshires delivered at seaboard. The graded price schedule paid by the Board to packers ranged from a top of $22.70 per 100 pounds for Grade A, No. 1 selection wiltshires of 55-65 lb. in weight, to $19.50 per 100 pounds for Grade B, No. 3 selection wiltshires, 75-80 lb. in weight.

Hog prices, dependent jointly on export and domestic values, did not fluctuate widely throughout 1944, one reason being that there was no great difference in returns whether the hog carcass was processed for export or sold in the domestic trade. Commencing January 24, 1944, producers delivering hogs to approved abattoirs have received a Dominion Government premium of $3 for each Grade A carcass and $2 for each Grade B1 carcass. This policy will continue till at least six months after the end of the war. In addition, most of the eastern provinces of Canada have also been paying extra premiums to producers of top grade carcasses.

The arrangement with respect to cattle prices has been somewhat different from hogs. Since May 27, 1943, there has been a flat year round ceiling for each quality of beef in each of the various Wartime Prices and Trade Board zones. In June, 1943, when the Meat Board was set up a floor price program for beef was initiated which provided for seasonally adjusted floor prices at various levels below the ceiling. This was replaced in July, 1944, with a flat year-round floor price for each quality of beef in each zone. No floor or ceiling prices were fixed for live cattle, however, leaving prices free to find an appropriate level between floor and ceiling. Generally speaking, throughout 1944, cattle of the better grades capable of producing red or blue brand beef, for example, commanded prices at or close to ceiling values, with poorer quality stock being taken at close to export floor prices.

Although a little over a million pounds of surplus mutton and lamb was delivered for export early in 1944 there was no formal export contract or price supporting program similar to bacon and beef. To provide an outlet for surplus production, restrictions on the shipment of live sheep and lambs to the United States were removed at the end of September, and in the final quarter of the year about 135,000 head were exported.

Surplus lard stocks began to accumulate in 1944 as a result of the unprecedented hog marketings and the comparatively large numbers of hogs processed for the domestic market with a resulting high yield of lard per carcass. By May 1, 1944, lard stocks were in excess of 20 million pounds or nearly ten times greater than the year previous. To clear this surplus and to provide an outlet for continuing heavy production, arrangements were completed by the Board for the export shipment of approximately 30 million pounds of lard, nearly 10 million pounds to the United Kingdom and 20 million pounds to the Union of Soviet Socialist Republics.

TABLE 2.—QUANTITIES AND SEABOARD VALUES OF MEAT PRODUCTS HANDLED BY THE MEAT BOARD UNDER VARIOUS EXPORT CONTRACTS

—		1939–40	1940–41	1941–42	1942–43	1944[1]	Total to date
		(In Thousands)					
Cured Wiltshire bacon and cuts	lb.	331,482	425,618	600,013	658,178	687,168	2,702,459
	$	60,860	69,920	118,810	141,364	152,208	543,162
Fresh frozen Wiltshires	lb.	....	....	....	16,883	8,628	25,511
	$	....	....	....	3,702	1,961	5,663
Pork offals	lb.	2,300	12,690	10,651	11,845	13,708	51,194
	$	234	1,287	1,124	1,399	1,618	5,662
Canned pork	lb.	....	....	5,784	12,696	31,212	49,692
	$	....	....	1,583	3,572	8,895	14,050
Lard	lb.	....	4,412	....	....	8,973	13,385
	$	....	375	....	....	1,180	1,555
Hog casings	bdls.	....	....	453	761	870	2,084
	$	....	....	568	975	1,262	2,805
Mutton and lamb	lb.	....	....	....	....	1,153	1,153
	$	....	....	....	....	257	257
Frozen beef	lb.	....	....	....	....	111,799	111,799
	$	....	....	....	....	22,695	22,695
Total value of products	$	61,094	71,581	122,086	151,011	190,075	595,847

(1) Preliminary and subject to revision. Some of the purchases of bacon and beef under the 1944 contracts commenced before the end of 1943.

Future Prospects.—At the Dominion-Provincial Conference held in December, the Minister of Agriculture, Hon. J. G. Gardiner, announced an extension of the contracts for both bacon and beef. These will now run to the end of 1946 at the present prices and the British Food Minister, J. J. Llewellin, has indicated that notwithstanding minimum commitments, the United Kingdom is in the market for all the bacon and beef Canada can spare. In fact Britain needs at least 600 million pounds of Canadian bacon in 1945 to maintain her four-ounce ration.

Whether 1945 meat production will equal that of 1944 seems to hinge on the trend of hog marketings, for marketings of cattle and calves are expected to be larger, and sheep and lamb marketings at least as large as in 1944. For hogs the recommendation is that production be maintained as close to 1944 levels as possible, but surveys, estimates and opinions expressed at the December Conference make it appear doubtful that slaughterings will be equal to 1944. However, it is likely that the Meat Board will again handle a very substantial volume of export meat products in 1945, and probably in 1946.

AGRICULTURAL POLICY: WARTIME PRICES OF FARM PRODUCTS

Frank Shefrin

Canadian price making policy during wartime is complicated by the necessity of maintaining domestic price ceilings and at the same time of maintaining the price structure and balance so that production is geared to meet war and civilian essential requirements.

Farm price policy includes price control and price setting. Price control is the result of a gradual development which first started with measures affecting selected products and was then expanded to cover all commodities. This was accomplished by the establishment of an overall price ceiling in December, 1941, by the regulation of the amount of markup and by the fixing of price differentials between grades of these products and between different markets. The purpose of these measures is to prevent inflation. The price ceiling protects the consumer by preventing prices of farm products from rising excessively. It protects the farmers against increases in the cost of things they have to buy. It prevents mal-allocation of agricultural resources. In a sense, the role of the price ceiling as applied to agriculture and industry has been twofold—that of preventing the inequities and demoralizing uncertainties of inflation, and that of focusing the national effort on the physical needs of the economy geared for a nation at war. Price setting has been accomplished through the establishment of fixed prices, guaranteed minimum prices and contract prices for exports, of farm produce. Farm prices have usually been set at levels intended to bring forth the desired production. By price setting, shifting floors beneath a fixed ceiling have been avoided. This has been done so that the farmer will not be penalized if he goes ahead to increase production at the request of the Government.

It is not our intention to discuss here the effectiveness of price control in regard to agriculture or the administrative problems involved, but rather to concentrate on the general farm price movement and on the price ceiling and price support policies during the war period. Price policy making has been complicated by the necessity of maintaining ceilings on food products for which there is a rising domestic demand, by the effect of increased British contracts, and by the effect of the rapid rise of farm prices in United States, particularly of cattle and grains. In applying price control, flexible methods have been necessary.

Price Ceilings.—The price ceiling, adopted as part of a broad wartime economic program, provides that no person may sell goods or supply services to consumers at a price or a rate higher than the maximum price or rate at which he made sales of such goods or services during the basic period between September 15 and October 11, 1941. Since the original order came into being, a number of amendments and revisions have been made.

In determining the prices of most farm products, the Wartime Prices and Trade Board recognized in its first statement of policy that the maximum price could not be based upon the ceiling prices of individual farmers. Consequently, one of the first acts of the Board was to exempt farmers' individual prices from the ceiling and to rely on ceilings over the manufactured or processed products. When these were not sufficient, wholesale market ceilings for the commodity concerned were also established.

When overall price control was instituted in December, 1941, ceiling regulations were not applied to the sale of farm products by farmers to dealers or to processing plants. As the administration of price control advanced, however, it was found advisable in the interest of all concerned to make certain exceptions to this general policy. These exceptions include wool, farm butter, certain grains and maple products. The reason for providing exemptions from ceiling regulations is to give farmers the benefit of any trading situation which might arise without increasing prices to the ultimate consumer. It also aims to permit supplies to flow freely from farmer to processor.

Ceiling price regulations do apply in the case of farmers selling products direct to consumers through market stalls or otherwise. Farmers become retailers to all intents and purposes and cannot sell products direct to consumers at prices any higher than the ceiling established for that district.

To facilitate dealings between farmers, certain transactions are exempted from price ceiling regulations, for example, exchanges, or barters of hay, grain, seed, seed potatoes, farm implements, fertilizers, bees, livestock, meat, poultry and poultry products, and other agricultural products and supplies, custom milling, seed cleaning and other agricultural services. These exemptions do not apply to any transactions involving resales.

While the retail ceiling order applies in every part to all food products held by dealers, processors, manufacturers, wholesalers and retailers, fresh fruits and vegetables were at the outset exempted from the general price fixing order. The exemption of fruits and vegetables from the retail price ceiling was due to the extreme variability of supply (including variety and sizes) and costs that made fresh fruits and vegetables unusually difficult to bring under effective and enforceable price control. For many of these products, costs go up seasonally because a summer crop not having an immediate market must be stored and perhaps processed, or because imports must supplement or replace Canadian produce. This does not mean that the prices of such commodities have been free to rise without restraint. In 1943, when prices of fresh fruits and vegetables rose substantially, steps had to be taken to bring them under ceiling control. A number of the more important fresh fruits and vegetables were then brought under the ceiling and ceilings for these products have generally been maintained ever since. Thus, the Board, during its operations in the three-year period between 1941 and 1944, has at different intervals established price ceilings for these crops, until to-day all leading items of domestic farm produce are controlled.

This action was in line with the declared policy of the Dominion Government with regard to agricultural price control policy whose purpose was stated to be twofold. In the words of the Prime Minister (October 11, 1941):

> "The policy touches the farmer in two ways. The principle of the price ceiling will be applied to agricultural prices while at the same time total agricultural income will be supported where necessary by Government action."

Wartime Price Supports.—In addition to a ceiling over farm prices, there were established direct and indirect floors or supports under the prices of many farm products. The main purpose of support prices during the war is to guarantee an adequate return to primary producers in order to stimulate them to greater production effort. Another purpose is to provide minimum prices for farm products selling in a diminished market. This measure aims at providing a minimum living income and at enabling the majority of farmers to keep growing such products, for example, wheat and apples, while waiting for market conditions to improve. The establishment of minimum prices in wartime is usually not accompanied by the difficulties that beset the maintenance of a price ceiling. With a guaranteed market for all they can produce, there is no reason for producers to sell below the set minimum price. However, problems of administering a support price policy are unavoidable. In order to maintain minimum or guaranteed prices, the Dominion Government at times has had to buy and store large supplies until markets became available.

The types of price supports provided vary in form and method of application. The following list provides a broad classification of the types of direct and indirect price supports.

(1) *Fixed prices.*—Fixed prices have been established for wheat, soybeans, sunflower seed and rapeseed. These are both ceiling and floor prices. They are usually announced prior to the seeding season, and the Dominion Government and its authorized agencies purchase the farm product at the fixed price.

(2) *Minimum prices.*—Definite minimum prices have been established for oats, barley, beef and butter. At the same time, ceiling prices were also set. Daily market prices are free to fluctuate between the floor and the ceiling.

(3) *Indirect price support.*—Definite large scale export commitments have a stabilizing influence on the market with the result that prices for produce consumed domestically remain in more or less close proximity to the contract price. The farm commodities affected by this arrangement are flax fibre, hogs, lambs, cheese, eggs, beans and peas.

(4) *Guaranteed minimum prices for a limited quantity.*—The Dominion Government since the outbreak of war agreed to purchase a specified maximum quantity of fresh or processed apples at a minimum price if the market price fell below the stated minimum. Usually the quantity purchased has been adequate to hold prices up to the level of the stated minimum.

(5) *Indirect minimum prices.*—To stimulate production of canning crops, raw tree fruits and jam berries, subsidies are paid to growers through the processors. The processor who applies for refund on subsidies paid out must prove he has paid the price as of a stated period. In this manner basic minimum prices are maintained.

(6) *Grower processor contract prices.*—For many years it has been customary for farmers and processors to agree on a price for the marketing of milk and sugarbeets. In these contracts or agreements are stated the minimum prices at which the grower agrees to deliver his produce to the processor. During wartime a similar arrangement has developed for the marketing of certain seeds, with the Dominion Government agreeing to take the seeds at a minimum price from growers providing they have no other market outlets.

Post-war Price Supports.—Even more important from the standpoint of the Government than the making, controlling, and supporting of prices in wartime are its commitments to support prices of designated farm products in the transitional period between war and peace. The Dominion Parliament on August 15, 1944, passed The Agricultural Prices Support Act which provides for the support of the prices of agricultural products during the transitional period. The legislation provides for the creation of an Agricultural Prices Support Board. The Board is empowered to prescribe, with the approval of the Governor in Council, prices at which it may purchase designated agricultural products.[1] It may also pay to producers the difference between the prices designated by the Board for any product and the average price at which the product is selling on the open market.

To a large extent, the maintenance of floor prices will be a marketing job. The mechanics of price support must be adjusted to the peculiar requirements of each commodity. The Act provides for the appointment of commodity boards and advisory committees. If it is decided that floor prices will be established for dairy products, a Dairy Board may be appointed, an Egg Board for eggs or a Meat Board for meat products. The Act, however, is not designed to be a marketing act in the sense of undertaking to market all farm products at the highest possible price. Direct market operations including purchasing, storing, transporting and resale, may be necessary. Ways will have to be found for disposing of foods purchased by the Board so as not to bring them back into competition with supplies moving through regular commercial channels. It is not intended that the Board shall purchase direct from farmers—it is empowered to purchase on the market.

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[1] Agricultural product means any natural product of agriculture, except wheat, designated by the Governor in Council and including processed meat, dairy and poultry products if so designated. Wheat is being handled by the Canadian Wheat Board.

The Board is given authority to buy any designated products at the established price and has the authority to sell or otherwise dispose of a product acquired. To finance operations under the Act a revolving fund of 200 million dollars is provided. Administrative expenses are to be paid by the Government.

Wholesale Prices of Farm Products.—The wholesale prices of all farm products, especially live stock and live stock products, have materially advanced since the outbreak of war and on the whole, prices at present are considerably above the immediate pre-war and 1926-29 levels. The index number of wholesale prices of Canadian farm products (1935-1939 = 100) was 89·8 in September, 1939. By September, 1944, the index number had risen to 141·1, an increase of 57 per cent. Reference to the table shows that for the same period the index number of wholesale prices of field products increased by 69 per cent and for animal products by almost 4 per cent. These advances were due to the expanded domestic demand for farm produce, to the payment of federal and provincial subsidies, and to the large exports to the United Kingdom of agricultural products at established prices.

Index Numbers of Wholesale Prices of Farm Products

(1935–1939 = 100)

Date	Canadian Farm Products		
	Total	Field	Animal
1926–29 average	140·9	143·7	136·4
Annual index 1929	140·8	139·6	141·9
September 1939	89·8	80·2	103·2
April 1940	100·7	96·6	106·1
August 1940	87·6	75·0	105·0
September 1940	89·1	75·4	108·2
December 1941	104·2	88·1	126·7
October 1943	144·7	135·1	157·6
December 1943	146·1	136·5	159·0
September 1944	141·1	135·4	148·5

The initial effect of the declaration of war in September, 1939, on farm prices was an upward movement. This trend was due to the anticipation on part of all that the war might bring, almost at once, a greater demand for Canadian products. When the market failed to develop as anticipated, and Belgium, the Netherlands, Norway, Denmark and France were invaded, the prices of farm products declined. The wholesale price index of field products was 96·6 in April, 1940, and fell to 75·0 in August of the same year. The reason for this marked decrease was the loss of markets as the invaded countries were buyers of Canadian wheat and feed grains. The live stock price indexes remained relatively steady. From September, 1940, there was an upward movement of wholesale prices of farm products. By December, 1941, when the overall price ceiling was imposed, wholesale prices of farm products had risen over 16 per cent above prices at the outbreak of war. During the same period field product prices rose about 10 per cent and animal product prices about

23 per cent. Between December, 1941, and September, 1944, wholesale price indexes of farm products increased 35 per cent, field crops increased almost 54 per cent, and animal products increased 17 per cent.

The wholesale price index for farm products reached 144·7 by October, 1943. This, for the first time, was above the annual price indexes for the years 1926-1929 and equalled the 1921 annual figure. In animal products, the index number of wholesale prices reached 157·6. This was exceeded only by the annual indexes during 1918 to 1920. Prices of field products showed a remarkable increase. Wholesale prices of farm products during the period October, 1943 to September, 1944, ranged between 144·7 and 141·1, the peak month being December, 1943, with an index number of 146·1. Farm prices showed a decline in the period between April and September, 1944. This was due mainly to the drop in live-stock prices.

Briefly, the increase in wholesale farm prices between September, 1939, and September, 1941, reflected sharp increases in live stock prices and to a lesser extent a rise in milk and grain prices. During the next three years, September, 1941, to September, 1944, the dominant factors were increases in wheat and cattle prices, payment of subsidies on milk for fluid use, for cheese, for concentrated purposes and for butter, and the introduction of payments (equalization fees) to farmers on the sale of oats and barley.

The index of wholesale prices of farm products used in the preceding paragraphs relates to wholesale prices paid to farmers for their produce, including subsidies, bonuses and premiums. This index should be distinguished from those price index components of the general index of wholesale prices of all products since these "component farm price indexes" relate only to market prices, excluding subsidies and such payments. Because these two sets of indexes relate to different price series they are not comparable.

In discussing the progressive upward trend of wholesale prices of farm products, it should be remembered that during the decade preceding war, with the exception of the years 1937 and 1938 (these years were well below the 1926-1929 level) there were some very lean years. The wholesale index of farm commodity prices declined more than 50 per cent between 1929 and 1932, and remained at low levels for several years. There was a substantial recovery in 1937 but a recession followed at the end of 1938. At the time war was declared, farm prices were still more than 40 per cent below the 1929 level. Even at the time when overall price control was applied in December, 1941, prices were 26 per cent below the 1929 level. It is no wonder that control as applied to agricultural prices (at wholesale and retail levels) at a time when such prices might normally be expected to rise more rapidly than the prices of other products, was unpopular among farmers. However, they were willing to recognize the desirability of stabilizing the economy. It was felt that such a program, if it were to perpetuate inequality, would not be acceptable and perhaps unworkable. It was brought out that it was not desirable to allow the continuance of the disparity between farm income and earnings of most other economic groups characteristic of the Thirties—to a large extent still in effect when the stabilization program was announced. This reasoning was recognized by the Dominion Government. Accordingly, little or no effort was made to prevent farm product prices from rising during the early part of the war. Even after an overall price ceiling was introduced, it was attempted to make this policy as flexible and equitable as possible to the farmer. The price ceiling was confined to farm products sold to consumers but does not apply on sales by the primary producers to wholesalers and processors. At the same time, another reason for permitting further price increases and also paying subsidies in the period since the ceiling was imposed was to facilitate further expansion in the farm production of the kind for which there were urgent needs, and to encourage extra effort on part of farmers and their families to offset lack of help and shortage of needed equipment.

CONDITIONS OF LIFE ASSOCIATED WITH LAND SETTLEMENT IN THE BONNYVILLE AREA OF NORTHEASTERN ALBERTA

B. H. Kristjanson and F. M. Edwards

The question of land settlement has assumed such importance in post-war rehabilitation schemes that it is considered essential that the "settlement process" be analyzed and understood. This interest has called for an examination, not only of the sequence and interrelationships of the development of land settlement, but also of the resultant levels of living. It was decided to look into some of the aspects of the levels of living and, to this end, during the summer of 1943, approximately 200 farmers were interviewed in the vicinity of Bonnyville, Alberta.[1] The object of this article is to show, in so far as possible, from the data assembled, the level of living associated with land settlement in northeastern Alberta. This information may be of value to the prospective settlers in so far as they can glean from it some appreciation of the level of living which they may reasonably expect in similar areas under similar circumstances.

The Farmstead.—Almost one-half of the farm families in the Bonnyville area were living in log houses. North of the Beaver River, where settlement is of recent date, the proportion of log dwellings was higher, being 66 per cent as compared with 33 per cent in the older district south of the river. A large number of operators indicated that they would have built frame houses within the last two or three years if the material had been available but the fact remains that the log structure has been, and is, characteristic of pioneering in this country. The cash expenditure for the construction of houses was, on the average, $380 per farm and their present value was estimated to be $554. This is low when compared with the estimates of the Dominion Housing Census, 1941, which placed the average value of farm dwellings in Alberta at $989. Practically all homes in this area had a basement but 70 per cent were what was termed "part dirt" basements. About 23 per cent were improved or full basements.

Table 1.—Rating of Buildings and Farmsteads in the Bonnyville Area of Alberta, 1943

——	Good to excellent	Fair to poor
	%	%
House	17	83
Barn	10	90
Farmstead	33	67

A simple rating of farm buildings was given during the survey, based on structural conditions, evidence of upkeep, and general appearance. Four general classes were used, namely: excellent, good, fair and poor. The distribution of the farm buildings on the farms studied in this area according to this classification is given in table 1.

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[1] This is part of a study undertaken by the Economics Division of the Dominion Department of Agriculture in co-operation with the University of Alberta, Edmonton. In the survey information was assembled on rate and cost of land improvement, farm organization and income, financial progress of settlers, home and community development and other facts relating to settlement. An area in the vicinity of Bonnyville was chosen for study of settlement in northeastern Alberta. In consultation with the District Agriculturist at St. Paul, Alberta, townships 60, 61, 62 and 63 in ranges 4, 5 and 6, west of the fourth meridian were selected for the study. The selection was made on the basis that settlement north of the Beaver River was of such recent origin that the initial stages could be examined in detail while, south of the Beaver, particularly in the immediate vicinity of the the town of Bonnyville were to be found farms which had reached a fairly advanced stage of development. North of the Beaver River the majority of settlers have arrived since 1928 whereas, south of the river, settlement was well underway by 1920.

Family Living Expenditures.—In considering the expenditures on family living indicated in table 2 it must be remembered that the period covered by this study, the twelve months ending April 30, 1943, represents one of the most prosperous years for the district. Furthermore the majority of these farms were sufficiently advanced in their development to take advantage of the unusually favourable price conditions.

It will be seen that cash family living expenditures varied with the degree of farm development (Table 2). In the earlier stages the current level of living was reduced in order that the assets of the farm business be augmented to a point where the resources of the family could be more fully utilized. While the data presented are not representative of conditions which have prevailed during the last ten or fifteen years they demonstrate that those farms which were reasonably well developed could, under favourable price conditions, earn a relatively high income. On the other hand, even under favourable price conditions, farms in the earlier stages of development were in a much less desirable position.

The more advanced farms, those having more than 100 acres under cultivation, had reached a stage of development where the average net worth amounted to approximately $8,400. During the farm business year 1942-43, after spending $775 for cash family living expenditures, and meeting all annual operating expenses including the costs of capital maintenance, the operators of these farms had an average surplus of approximately $464 per farm which might be used to service indebtedness or for savings.

TABLE 2.—FAMILY LIVING EXPENDITURES, IN RELATION TO CULTIVATED ACREAGE, ON FARMS IN THE BONNYVILLE AREA, 1942-43

—	Acres cropland per farm			
	Less than 50 acres	51–75 acres	76–100 acres	101 acres or more
	$	$	$	$
Groceries, fruit, meat, fuel, light and maids hired	190	233	231	339
Clothing	95	99	131	172
Health	67	38	30	69
Education	9	3	18	27
Church charity	5	8	18	19
Personal expenses	36	70	48	91
Automobile, personal	6	8	12	24
New house furnishings	14	27	25	32
Life insurance	....	1	2	2
Total living expenditure	422	487	515	775
Total adult months in home(¹)	42	39	38	52
Number of farms in sample	34	36	22	83

(¹) A person 15 years of age or more remaining in the home for one month = 1 adult month, persons less than 15 years of age = 0·5 adult month.

It took farmers, having from 51 to 75 acres under cultivation, 10 to 15 years to bring this much land under the plough. The net worth of these farms at the end of the business year under review averaged approximately $3,950. After spending $487 for cash family living expenditures and meeting all current operating expenses including the costs of capital maintenance, the operators of these farms had an average surplus of about $191 per farm to service indebtedness or for savings.

The cash family living expenditures varied from $10 per adult month on farms having less than 50 acres of cropland to $15 per adult month on those farms having more than 100 acres of cropland. The average total cash living expenditure per farm for the area as a whole was $615.

The expenditure on food was probably the most satisfactory aspect of the budget (Table 2) although the amount of money spent on food does not necessarily determine its value from the standpoint of a desirable diet. The cash expenditure on health and clothing is not an adequate criterion of the effectiveness of such outlays. Education expenditures include such items as fees, and board of children attending schools other than the local tax supported ones, school books and educational supplies purchased directly out of the family purse. It is evident from the sums spent on education very few attended schools which provided higher education than that offered by their own rural schools.

The small personal expenditures and negligible automobile expenses indicate that these people travel very little. Their contacts with the world at large are made through the Church, the radio, the newspapers, and discussions on market days.

Another striking feature of pioneering areas in northern Alberta is the small amount spent for life insurance (Table 2). The same general condition applies to other forms of insurance—there was practically no fire, crop or sickness insurance in the entire area. Fire hazards are great in wooded areas, particularly where house construction is poor. In this area crop damage has frequently been severe. It is generally conceded that accidents and sickness take a relatively heavy toll in these newer districts. Therefore, in an area such as this, where the financial resources of the average settler are quite limited and where the risks of enterprise are high, the utility of insurance is also high. Yet it is precisely in these areas that all types of commercial insurance are practically non-existent.

Public Services.—There was considerable difference in respect to the availability of social services between the farms in the more advanced stages of development lying south of the Beaver River and those to the north of the river. The grade school, the church and community hall were located within a reasonable distance of the farm in most cases but in the case of medical services the majority of farm people in the Bonnyville area were in an unenviable position. The means by which the available doctors and nurses could render the maximum service was to remain at their bases in Bonnyville. However, the necessity of travelling from 8 to 15 miles, and sometimes more, by horse-drawn wagons or sleighs reduced the effectiveness of medical services in many instances.

Only 35 per cent of the farms in the Bonnyville area had either a car or truck.[1] Two-thirds of the farmers were dependent upon horses for their transportation and for those farms north of the Beaver River, the average distance

TABLE 3.—LOCATION OF FARMS IN RELATION TO PUBLIC SERVICES IN THE BONNYVILLE DISTRICT, ALBERTA, 1942–43

—	Number of Miles from Farm	
	South of Beaver River	North of Beaver River
	Mi.	Mi.
Shipping point	6·0	15·0
Grade school	2·0	2·0
High school	6·0	12·0
Church	4·0	4·0
Community hall	5·0	2·4
Doctor	8·0	15·0
Hospital	8·0	15·0

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[1] These vehicles had a value, on the average of $300, were purchased on a cash basis, largely during the last three years, the majority being models dating back to 1930 or prior to that time. Average operating expenses for the year of this study amounted to $114.

to market was 15 miles (Table 3). This meant that an inordinate amount of time was taken up in marketing produce. Furthermore it was not uncommon to find farms isolated for weeks at a time due to impassable roads.

This whole question of providing such areas with the desired public services is a difficult one. For instance, efficiency of marketing is to some extent dependent upon the type and condition of roads but they in turn are provided for in the tax levies, the amount of these being determined by the success of the enterprises of the community. But the fact remains that, whether a given standard of public services is required to increase the density of population or whether the population must be increased first, adequate social services can in the long-run be maintained only in areas where the man-land ratio is reasonably high.

Conclusions.—The purpose of this article has been to provide a picture of the level of living which has attended land settlement in northeastern Alberta.

Eighty-three per cent of the farm dwellings in the Bonnyville area were classified as either fair or poor. Over one-half were of log construction. The living expenditures for the year of this study were probably considerably higher than the long-term average since cost-price conditions of production were unusually favourable. But even in such a relatively prosperous year, there were aspects of the budget, such as the expenditure on education, which appeared to be distinctly inadequate. It is interesting to note also the virtual absence of any form of insurance in the district.

In the past the settler has sacrificed a portion of his income, which might well have been spent on improving living conditions, in order that the resources of the farm business be increased. This has been necessary where the initial capital possessed by the settler has been small. In the future to facilitate better living conditions on pioneer farms, capital funds should be provided at a cost which could be met by the settler.

FOOD CONSUMPTION IN FARM HOUSEHOLDS

Flora M. Webster

A national food policy which attempts to raise the level of health by preventing under-nutrition should include provisions for adequate supplies of protective foods, equitable distribution and adjustment of food habits to needs. Knowledge of nutrition has advanced so far that we know the fundamental importance of food in relation to health. Lack of proper food is the sole cause of certain diseases; it is also an important factor in lowering resistance to diseases. Studies of food consumption and the effect of such food consumption on health provide evidence of weaknesses in diets and disclose in what sections of the country these weaknesses occur.

A few limited investigations have been made on nutritional conditions in Canada. Most of the studies have been urban. There is need for further investigation, particularly among rural groups.

A study of the dietary habits of twenty farm households on Ile Perrot, adjoining the Island of Montreal, in the Province of Quebec, has been carried out recently by the Economics Division, Dominion Department of Agriculture, in cooperation with Macdonald College, McGill University. The average total farm value of the farms surveyed is higher than the average value for the county as a whole. Income is frequently supplemented by rentals from summer cottages and the local sale of farm produce.

Foods consumed by each of the families during a seven-day period in June were expressed in terms of food nutrients, namely, calories, protein, iron, calcium, vitamin A, thiamin, riboflavin and ascorbic acid, and compared with the allowances of these nutrients adapted for use in this country by the Canadian Council on Nutrition. Since the economic condition of the families appeared to be above the average for the district and the study covered only one week, no broad inferences or applications can be made from the findings. Furthermore, the study deals with the family rather than the individual and families which appear to have good food intakes may have unequal distribution of food within the family group.

Adequacy of Nutrient Consumption.—The food energy value or the caloric intake was thought to be generally adequate. The total protein intake was satisfactory, although one household where no milk was consumed, received only fourteen per cent of its protein from animal sources as opposed to the recommended one-third.

Most of the families were supplied with sufficient quantities of iron, one-quarter of which was from cereals and cereal products, one-sixth from meats and slightly less from potatoes. The per person consumption of bread was 2·8 loaves (24 ounces per loaf) for the week. Only two families bought brown bread but fourteen of the twenty families ate rolled oats or other whole grain cereals which made a substantial contribution to the iron supply. Although the per person consumption of meats was two pounds (edible portion), one-fifth of it was in the form of fat salt pork which lowered, by a considerable amount, the percentage of iron supplied by meats.

The calcium intake was reasonably satisfactory. More than half the calcium was supplied by milk, the per person consumption of which was 7·1 pints for the week. This amount is slightly above the minimum amount (½ pint per adult and 1½ pints per child per day) suggested in Canada's Food Rules. The cheese consumption, however, was only ·9 ounces or approximately one serving per person per week. Three servings are desirable.

The vitamin A was unevenly distributed, several families receiving twice the recommended amount and several receiving only about two-thirds of the allowance. Families obtained more than half of their vitamin A intake from dairy products and only one-fifth from leafy, green and yellow vegetables. The high cream consumption (·6 pints per person for the week) contributed two-thirds as much vitamin A as did the milk. The season (June) may be partly responsible for the relatively low contributions made by leafy, green and yellow vegetables.

The average family intake was lower for thiamin than for any other nutrient analysed, slightly more than one-fifth of which came from cereals and cereal products, one-fifth from potatoes, slightly less from milk and the same amount from meats. Replacing the bread consumed with Canada Approved brown or white bread would be a simple method of raising the thiamin intake to a more satisfactory level. In addition, the refined breakfast cereals could be replaced with whole grain products.

Several families were not receiving sufficient quantities of riboflavin. Half the intake was from milk, one-tenth from meats and slightly more from cereals. Although the quantity of milk used was somewhat more than the minimum suggested in Canada's Food Rules, it is recognized that a higher consumption is advantageous in bringing the riboflavin to the recommended level.

Judged by present standards, more families were receiving insufficient intakes of ascorbic acid than of any other nutrient analysed. A third of the ascorbic acid was from potatoes, almost a quarter from other vegetables and a fifth from tomatoes and citrus fruits. It may be noted that potatoes have contributed relatively large amounts of three of the nutrients mentioned. Due to variable losses in cooking, vegetables are not as reliable a source of ascorbic acid as are tomatoes and citrus fruits, the consumption of which was lower than is desirable.

Economic Considerations.—Home-produced foods were evaluated at prices from local stores. Of the total money value of the week's food, eleven per cent was represented by milk and cheese, twenty-two per cent by fruits and vegetables and twenty-eight per cent by meats, fish, poultry and eggs.

Households were classed according to the per person money value of the food consumed by the members. The intake of nutrients increased as the money value of the food increased.

Size of Family.—Households were classed also according to the number of individuals per household. The amounts of nutrients obtained by the nine households with fewer than 6·3 (average number per household) individuals were higher for every food constituent analysed than the amounts obtained by the eleven households with more than 6·3 individuals.

Home-produced Foods.—Eleven of the twenty households produced more than half (money value) of the food consumed during the week. Those producing more than half were somewhat better fed than the remainder. In the food intake of these two groups, significant differences were evident in five of the eight nutrients analysed.

In the families studied, the calories, protein, iron and calcium intakes appeared to be reasonably adequate for most of the families when considered on the family unit basis. The intake of vitamins was less satisfactory, the lowest levels being apparent for thiamin and ascorbic acid. Diets tended to improve with increases in money value of food, with smaller sized families, and with larger percentages of home-produced foods.

The findings reported were not followed by medical examinations and therefore cannot be related to the health of the families studied. However, the low consumption of certain nutrients suggests a need on which to base a plan for improving the nutrient intake of the group. Dietary studies of this nature, on a national scale, accompanied by investigations regarding nutritional status and health, are necessary before recommendations can be made regarding food and nutrition policies which aim at progressive improvement in diets.

HOT SPRINGS RESOLUTIONS AND UNITED NATIONS POST-WAR PLANS FOR AGRICULTURE

L. Lorinez

Insatiable wartime demands usually result in breaking new land and in expanding world food production. Such an expansion has occurred, for example, in Great Britain during the present war and it has been generally recognized that unless international action is taken to further trade and stimulate demand for farm products, adjustment in the post-war period will be both necessary and difficult.

A United Nations Food and Agricultural Organization is in process of formation and is designed to bring remedial action by:

1. Raising levels of nutrition and standards of living in the world;
2. Improving agricultural technique and reducing the cost of food to consumers;
3. Facilitating international distribution of food.

Comparing recently published post-war plans of individual member countries of the United Nations with the above aims, the impression is gained that planning is greatly influenced by the nature and character of their national economy. While the attainment of the above enumerated goals is recognized as desirable, concrete proposals as to their practical implementation in individual countries are conditioned by domestic equilibrium between industry and agriculture, national wealth, dependence or independence on export markets, and degree of internal development.

While an undertone of great anxiety about the future is latent in all these plans[1] and the hope is expressed that the Hot Springs resolutions may bear fruit as regards expansion of world markets, nations whose international economic position is insecure are reluctant to reduce trade barriers.

More uniformity of purpose can be detected with regard to reducing cost of production,—not only to place nourishing food within reach of everybody,—but in some cases with the openly expressed aim of making ready to face post-war competition.

Raising Levels of Nutrition and Standards of Living.—The farmers' prosperity being dependent upon both the volume of food consumed and upon the prices received, it is obvious that these matters must receive major consideration. If nutritional plans as well as production and price programs were developed by the same agency, offer and demand in foodstuffs in a planned economy could be balanced to the end that satisfactory prices might be secured. Such co-ordination should be on an international scale, however, to ensure that the interests of both producers and consumers be recognized. At the time when the foregoing national plans for post-war agriculture were prepared, such complete co-ordination was not in sight. Therefore, concrete proposals under this heading laid the greatest stress upon price policies.

The United States plan asks for parity of income with urban income and rejects simple price parity. British farmers want a definite relation between the price levels and cost of production, as well as stable prices fixed for three year periods. Australians are satisfied with a fairly stable price relationship for at least the major farm commodities. The main preoccupation in the U.S.S.R., China, and India is to increase total production sufficiently to supply enough food for large populations. Their plans provide for considerable increases in food supplies, and considerations relative to price levels are not of immediate concern.

Improving Agricultural Technique and Reducing Cost of Food to Consumers.—Determination to put an end to soil mining and to definitely ensure proper farming practices is common to all national plans. But there is considerable variety as to methods of implementation.

The United States plan considers private property as a public interest. This plan proposes condemnation and sale to better farmers of misused lands in extreme cases. The British project links guaranteed prices with obligation to follow directions relative to cultural practices, land use and other phases of farm technique, to be given by a body similar to the present Agricultural Executive Committees. There is no hint of compulsion in the Australian report, which complains that wartime restrictions have made large numbers of citizens uneasy about too much centralized regulation. The report stresses, nevertheless, that continuation of certain controls will be inevitable after the war.

In most countries, endeavours to reduce the cost of food to consumers are limited to proposed savings effected by mechanization, as well as better technique and management of production. But the South African plan goes even so far as to propose nationalization of flour mills, creameries, canneries and other food processing industries to be operated at cost, in order to reduce distribution expenses and secure full benefits for the farmer. In the U.S.S.R. complete government control of national economy facilitates the enforcement of government plans without need of special legislation.

International distribution.—It is in this field that the greatest difficulties in arriving at a uniform platform are experienced. The plan prepared by the United States Department of Agriculture proposes reduction in domestic production of agricultural commodities that cannot meet world competition, thereby supplying foreign exchange to other nations by increasing imports of these goods. On the other hand, British policy will be influenced by the nation's heavy post-war indebtedness. This will require a 50 to 60 per cent increase in overall exports.[1]

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[1] See sources of reference at the end of this article.

The British plans prepared by various semi-official committees suggest import quotas and annual contracts for imports from abroad instead of open market transactions.[2] They would ensure reciprocity from exporting countries in purchasing British industrial products. It is proposed that the government be given a free hand to make arrangements to regulate production and imports alone or with those countries prepared to come to an agreement, should negotiations for international arrangements not be entirely successful. These proposals merit the careful consideration of non-European countries and should be related to their wartime industrialization.

Australia is girding herself to meet competition and exhorts farmers to cut the cost of production so they will be in a position to meet whatever might face them in the post-war world. China has also laid claims to certain post-war export outlets, though domestic markets could easily absorb a greatly increased food output. The trend in New Zealand is indicated by Premier Walter Nash in his recent book on New Zealand: "For many years after the war the world will, I believe, if it is wise, be working on a commodity exchange basis and not exclusively on a financial or money exchange basis."

Conclusions

It is apparent from these plans that surplus food producing countries are preparing for an expansion of their export activities. However, the position of former importing nations with respect to volume of imports is not so clear. Great Britain plans to maintain a "high level of production" after the war. Soviet plans provide for new crop acreages aggregating several million acres yearly; China envisages a 14 per cent annual overall increase in plant products and much more in live-stock; India would raise total agricultural production by 100 per cent within 15 years. If we take these factors into account and also consider financial and other factors that will influence production and trade in the post-war period, it will be obvious that a great deal of thought and planning will be necessary if a satisfactory solution is to be found to the problems that confront the nations. It would be presumptuous at this time to do more than call attention to the problems and plans under consideration. It may be appropriate, however, to observe that these problems and plans are indissolubly linked with broader political, economic and social issues. Some of the factors that will have a decisive influence upon the volume of international trade in farm products in the years ahead may be listed as follows:

Factors Favouring Expansion:

Maintenance of world peace.
Accumulated wartime savings.
Employment associated with the rebuilding of devastated areas.
Probable availability of long term international loans.

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[1] Late in August, 1944, Richard Miles, Economic Adviser of the British Embassy of Washington told a meeting of the Canadian Institute of Public Affairs that Britain's adverse balance of trade required an increase in her post-war exports by 50 to 60 per cent over pre-war levels.

Again, an editorial in the October 28, 1944 issue of "The Statist" commenting on belatedly published figures relative to Britain's wartime exports, stresses that "With the loss of income from investments and other invisible exports, sales of British merchandise abroad will have to be increased not to their pre-war level but to 50 per cent above."

[2] No definite official policy has been declared to date by the government. According to a statement made in November, 1944, by Mr. Tom Williams, Parliamentary Secretary, Ministry of Agriculture, changes in the international economic situation would occur frequently not only during the transition period but perhaps for five or even fifteen more years. These would have to be studied and only after that period would it become possible to "fit agriculture firmly and securely into a new world pattern."

Backlog of demand for consumer goods.
Backlog of tourist travel.
Relatives' remittances from overseas countries to Europe.

Factors Adverse to Expansion:

Accumulation of large national and foreign debts, including lend-lease debts, if called either in money or kind.
Extensive disappearance of investments abroad held by certain nations that formerly imported agricultural products.
Greatly expanded agricultural and industrial capacity and a lesser degree of dependence on supplies from abroad.
Development of successful and less expensive substitutes.

One way of striking a balance between these conflicting factors is to make imports dependent upon exports and consideration is being given to such a plan in certain countries. This would be in line with systems first introduced in Europe by Germany after 1929. Since Great Britain and Germany were the two most important markets for foodstuff before this war and may continue to be after the war unless German industrial activity is greatly reduced, the exchange policies of these countries merit special consideration.

Great Britain is committed by Article VII of the Master Lend-Lease Agreement to a policy of "non-discrimination" in her external trade. Just what this means was defined in a speech by the Chancellor of the Exchequer to London bankers early in October, 1944, when he advocated a "non-discriminating, multilateral system of international trade" for Great Britain, as opposed to "what is in essence a barter system". Sir John Anderson also stated in the House of Commons early in October that "clearing and payments agreements, bulk purchase contracts and import control come within the definition of non-discrimination". This statement seems to indicate that Britain is considering a policy of import control as foreseen in various post-war planning reports, combined with annual or pluri-annual purchase contracts for specified quantities of commodities, payment for which will be made either by crediting the proceeds to a clearing account or under separate payments agreements.

Pre-war German trade was carried on along lines similar to those now under consideration in Britain. However, Germany's reluctance to part with materials and commodities needed for military purposes, unbalanced the German clearing system, which finally degenerated into barter to a large extent. The nature of Germany's post-war trade policies cannot be predicted at this time.

At the Bretton Woods Conference the Soviets accepted the idea of creating a world bank. This may be regarded as a hopeful beginning of the return of international co-operation after the war. It is to be hoped that understanding will follow with respect to other, more specific problems, related to agriculture. Proposals recently made for the establishment of a United Nations Economic Council, in the course of the Dumbarton Oaks security talks, may prove to be the first step in this direction.

Statements made in this report are based upon the following official or semi-official releases:

United States:
"What Post-War Policies for Agriculture?" U.S. Department of Agriculture Inter-bureau and Regional Committee on Post-War Programs.

United Kingdom:
1. July, 1944, report of the Parliamentary and Scientific Committee (formed in 1939 by 172 peers and members of parliament of all parties and representatives of 53 associations and societies.)
2. May, 1944, conference of delegates from the National Farmers' Union, Councils of Agriculture for England and Wales, land owners, trade unions and the Royal Agricultural Society.
3. "A Post-War Agricultural Policy for Great Britain" published in 1943 by a group of peers of varied political creeds.

Australia:
Report of the Australian Rural Reconstruction Commission to the Minister of Post-War Reconstruction, January, 1944.

Union of South Africa:
Report of the Reconstruction Committee of the Department of Agriculture and Forestry, June, 1944.

India:
June, 1944. Plan for post-war development of Agriculture and Animal Husbandry prepared by the Planning Committee of the Imperial Council of Agricultural Research.

U.S.S.R.:
Decree of March 15, 1944, on "Organization of Agriculture and Increasing 1944 Production"; Decree of March 11, 1942: "Measures Pertaining to Preservation of Young Stock and Increasing Livestock on Collective and State Farms."

China:
"Memorandum on Agriculture in China" by the Chinese Delegation to the Hot Springs Conference; "China Handbook 1937-1943."

Public utterances by responsible government officials as quoted.

NOTES

Roy F. Hendrickson of the United States, Deputy Director General of UNRRA, in an article entitled "Food for First Aid" in the Winter 1944 issue of Land Policy Review, referring to the activities of UNRRA as regards food stated:

> "The task of food relief must always be measured in terms of what conditions were in peacetime. UNRRA's job is emergency relief. It was organized to help the people in liberated areas over the first high peaks of distress, so that they may be strengthened enough to help themselves. UNRRA is not expected to go in for long-term reconstruction, nor can it correct ills and weaknesses inherent in the agricultural and social system long before the war started.
>
> Thus, in fixing our sights we must take into account our own budgetary limitations. We must keep firmly in mind the global picture with regard to food before the war multiplied hunger and want."

He indicated that,

> "After careful calculation, the member nations of UNRRA have agreed to a relief standard of from 2,000 to 2,650 calories a day. That would seem scanty fare to a farm family in our Midwest; it is not quite so scanty to the peasant of Eastern Europe who has had to content himself for generations with a meager and sometimes painfully inadequate diet. Because of shortages of fats and sugar the relief diet will be restricted; but it will seek to contain an adequate supply of calories and there will probably be marked improvement in the quality of diet to which Eastern Europe has been forced to adjust during the war, especially in Poland and Greece where suffering has been so great."

In referring to the source of supply, he indicated that,

> "Perhaps one-fourth of relief food requirements will take the form of wheat. Wheat is in abundant supply in this country, Canada, Australia, and the Argentine."

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The ECONOMIC ANNALIST

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THE ECONOMIC SITUATION

The opening months of 1945 have been characterized by a relatively high level of business activity, as revealed by the trend of the major economic indices. There have been no significant changes in the indices of prices for some months, however.

Bank deposits continued the increase which has characterized the war period. Deposit liabilities of chartered banks in the first two months of 1945 at over $5 billions, were almost 19 per cent greater than a year ago. There has been a marked increase recently in speculative trading on stock exchanges, with activity at the highest levels since 1939 and the index of common stock prices in January and February 11·5 per cent higher than a year ago.

On the other hand, opening months in 1945 have shown a decrease in some phases of industrial and business activity. The index of the physical volume of business for the first two months averaged 222·7 compared with 244·3 in the same period a year ago. Industrial activity generally was on a somewhat lower plane, with the index of manufacturing production receding to an average of 272·1 in January and February, compared with 304·0 in the first two months of 1944. Some reduction in war contracts was the principal factor in this decline.

The national income for the first two months of 1945 is estimated at $1,444 millions, a decline of about 2 per cent for the corresponding figure of $1,475 millions in 1944.

The general index of wholesale prices has shown very little fluctuation during the past 18 months. The index for March, 1945 at 103·0 showed a slight advance from January, but was at the same level as March, 1944. The index for Canadian farm products in March reached the highest point to date in wartime at 105·1, but there has not been a very great advance since October, 1943. For March, 1945 the index for animal products was 123·6 and for field products 94·0.

The official cost-of-living index on March 1 advanced to 118·7, compared with 118·6 on February 1, and 119·0 at March 1, 1944. The wartime increase up to March 1, 1945 was 17·8 per cent, and the highest point yet recorded was 119·5 at October 1, 1943.

The narrow range of fluctuations in the cost-of-living index and the price indices indicate that wartime price control policies have apparently been highly effective in accomplishing the intended purpose. Although prices of farm products in general did not record much advance in 1944, approximately $104·5 millions was paid out of the Dominion Treasury in the form of subsidies, premiums and bonuses to producers of various agricultural products during the past year.

With the end of the war in Europe now in sight, attention is being shifted from the urgency of producing more munitions, to that of producing the maximum possible food. As more and more territory is liberated, the need for weapons tends to decline, and the demand for food to increase.

One of the products for which there appears to be an over-all shortage in 1945 is meat. Hog production in both Canada and the United States will be much smaller than the record marketings in both countries a year ago.

MAY 1945
UNIVERSITY OF TORONTO

ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Living Costs and Production Indexes Computed by Dominion Bureau of Statistics: Index of Industrial Wage Rates Published by Department of Labour

Year	Wholesale Prices 1926=100				Cost of Living 1935-39=100		Commodities and Services used by Farmers, 1935-39=100		Production
	All commodities (1)	Farm products (2)	Field products (3)	Animal products (4)	Urban Living Costs (5)	Farm Living Costs (6)	Eight Factors (7)	Eleven Factors (8)	Physical volume of business (9)
1913....	64·0	64·1	56·4	77·0	79·7	79·6	....	....	....
1914....	65·5	70·2	65·4	78·3	80·0	82·0	....	....	....
1915....	70·4	77·9	76·9	79·5	81·6	86·3	....	....	....
1916....	84·3	89·8	88·8	91·4	88·3	93·6	....	....	....
1917....	114·3	128·5	134·5	118·4	104·5	111·6	....	....	....
1918....	127·4	132·6	132·0	133·6	118·3	131·4	....	....	....
1919....	134·0	146·7	142·6	153·5	130·0	143·0	....	....	62·3
1920....	155·9	160·6	166·5	150·8	150·5	170·7	....	....	65·9
1921....	110·0	103·7	100·3	109·5	132·5	139·5	....	....	58·1
1922....	97·3	88·0	81·4	99·0	121·3	127·5	126·9	133·2	69·1
1923....	98·0	81·5	73·3	95·1	121·7	127·9	118·7	128·7	74·7
1924....	99·4	88·1	82·7	97·2	119·5	125·1	122·5	132·6	73·9
1925....	102·6	101·0	98·2	105·6	120·6	123·6	124·3	131·8	79·4
1926....	100·0	100·0	100·0	100·0	121·8	120·9	120·6	129·3	87·3
1927....	97·7	102·1	99·9	105·7	119·9	119·5	120·9	130·1	92·7
1928....	96·4	100·7	92·6	114·3	120·5	118·3	119·4	128·2	102·4
1929....	95·6	100·8	93·8	112·5	121·7	117·4	118·4	127·5	109·6
1930....	86·6	82·3	70·0	102·9	120·8	113·7	105·7	116·3	95·6
1931....	72·1	56·3	43·6	77·6	109·1	103·7	91·8	100·8	81·7
1932....	66·7	48·4	41·1	60·7	99·0	97·7	88·7	93·4	68·7
1933....	67·1	51·0	54·8	59·7	94·4	95·7	88·4	90·0	69·6
1934....	71·6	59·0	53·8	67·7	95·7	97·8	96·8	96·0	82·2
1935....	72·1	63·5	57·3	74·0	96·2	97·9	95·6	96·0	89·4
1936....	74·6	69·4	65·8	75·3	98·1	98·3	98·4	98·0	98·0
1937....	84·6	87·1	88·3	85·0	101·2	102·9	108·5	105·4	107·2
1938....	78·6	73·6	69·0	81·3	102·2	102·0	101·1	101·5	98·6
1939....	75·4	64·3	54·2	81·2	101·5	99·5	96·1	99·1	106·9
1940....	82·9	67·1	55·9	85·2	105·6	108·6	102·3	105·7	124·3
1941....	89·9	71·2	56·5	95·8	111·8	114·2	108·2	114·1	165·0
1942....	95·6	82·5	66·5	109·2	116·8	119·2	119·7	128·0	202·2
1943....	99·9	95·9	81·6	119·9	118·4	121·7	122·4	136·0	235·9
1944....	102·5	102·9	91·8	121·3	118·9	122·8	125·7	138·8	236·3
1944									
Jan.....	102·5	104·0	92·1	123·8	119·0	122·7	125·5	135·7	247·0
Feb....	102·7	104·3	92·5	124·1	118·9	....	....	....	241·6
Mar....	103·0	104·5	93·0	123·7	119·0	....	....	....	247·8
April...	102·9	104·0	92·4	123·4	119·1	123·0	125·8	139·5	239·5
May....	102·5	101·8	91·2	119·6	119·2	....	....	....	236·0
June....	102·5	102·0	91·1	120·2	119·0	....	....	....	238·8
July....	102·5	102·0	91·8	119·0	119·0	....	....	....	232·2
Aug....	102·3	101·2	91·2	117·9	118·9	122·6	125·8	141·3	233·1
Sept....	102·3	101·0	91·0	117·8	118·8	....	....	....	231·0
Oct.....	102·4	103·0	91·6	122·0	118·6	....	....	....	228·0
Nov....	102·4	103·1	91·5	122·5	118·9	....	....	....	227·9
Dec.....	102·5	103·3	92·2	122·0	118·5	....	....	....	233·0
1945									
Jan.....	102·8	104·4	93·5	122·7	119·0	122·8	125·3	137·4	228·8
Feb....	102·9	104·6	93·8	122·7	118·6	....	....	....	216·7
Mar....	103·0	105·1	94·0	123·6	118·7	....	....	....	225·2

1. See Prices and Price Indexes 1913-1928, pp. 19-21, 270-289 and 1913-1939, p. 17.
2. Wholesale prices of Canadian products of farm origin only. See Prices and Price Indexes 1913-1937 p. 52, and Monthly Mimeographs 1943-44.
3. Wholesale prices of grain, fruits and vegetables.
4. Wholesale prices of animals and animal products.
5. See An Official Cost of Living Index for Canada, 1940.
6. Price Index Numbers of Commodities and Services used by Farmers (Revised Mimeograph).
7. Ibid 6. Includes prices of commodities in eight groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.
8. Ibid 6. Includes the eight commodities indicated above plus tax, interest and farm wage rates.
9. Monthly Review of Business Statistics, p. 8 and Monthly Indexes of the Physical Volume of Business in Canada, supplement to the Monthly Review of Business Statistics November, 1932. Yearly index numbers for 1943, subject to revision.

ORGANIZATION AND FUNCTION OF THE AGRICULTURAL ECONOMICS DIVISION

J. F. Booth

The Agricultural Economics Division, Dominion Department of Agriculture, was established in October 1929. At that time, it became the ninth Branch of the Department. Subsequently, with the consolidation of these nine Branches into four Services, the Economics Branch became a Division of the Marketing Service.

Although the association of the Division with the Marketing Service suggests limitation of activities to marketing, the services of the Division in reality encompass a wide range of economic research from production to consumption. Research in farm production has centred mainly in farm and ranch business and cost studies; in land economics, farm settlement studies, land use, land classification and land tenure research have been featured. Research in the marketing of farm products has dealt largely with terminal produce markets in large urban centres with methods and costs of processing and marketing, and with regional market surveys.

The Division assembles annual statistical records from co-operative associations in Canada and from time to time conducts special studies having to do with management problems, credit and other matters relating to cooperative enterprise.

Price and statistical analyses and their application to government policies have occupied a considerable part of the time of the staff, particularly in recent years. Some work has been completed in agricultural credit and taxation. Foreign agricultural policies and their relation to Canadian agriculture are a subject of continuous investigation.

The Division has been responsible for considerable research in connection with the consumption of agricultural products. A number of studies dealing with the consumption of such products as milk, cheese, butter, eggs, meats, and fruits have been completed.

Moreover, a beginning has been made in studying rural social problems. These studies are for the present supplementary to land use studies in Western Canada but the importance of such research is recognized.

While the Division initiates and conducts research on its own account a substantial part of its program has been conducted in co-operation with other agencies. Some of the projects are carried on jointly with other Divisions and Services of the Dominion Department of Agriculture, for example, other units of the Marketing Service and the Experimental Farms Service. Equally important, however, has been its co-operative arrangements with provincial Departments of Agriculture and universities. A substantial number of research projects have been undertaken at the request of such bodies and with their active participation. In practically all instances, the projects conducted on a co-operative basis have represented a pooling of personnel and resources.

Headquarters and over half of the staff of the Division are located at Ottawa. To facilitate administration and to reduce the cost of services the Division maintains offices and staff in provinces located some distance from Ottawa. These provincial headquarters are at the Universities of Manitoba, Saskatchewan, Alberta and less formal arrangements have been made in British Columbia. It is anticipated that similar arrangements will be completed with other provinces when opportunity permits. The staff of the Division at each of these institutions is located in quarters provided by the Universities and works side by side with the University personnel.

Research projects conducted in co-operation with provincial Universities or colleges nearer the Ottawa headquarters are handled by direct exchange of research workers and temporary assignments to the institutions in such provinces. While much of the research program of the Division is conducted in co-operation with Universities and Colleges of Agriculture many projects have been carried on in co-operation with provincial Departments of Agriculture, marketing boards and similar agencies. Some projects originate in requests from farm organizations and the co-operation of such bodies has facilitated the conduct of research work.

Wartime Activities.—Since the advent of war in 1939, certain of the peace time activities of the Division have been reduced to some extent in favour of projects originating in the war program. This has been brought about in large measure by the necessity of servicing the agencies established within the Department of Agriculture to administer production and marketing programs. A substantial part of the present staff of the Economics Division at Ottawa has been employed in recent years as Economic Assistants to such agencies as the Agricultural Food Board, the Agricultural Prices Support Board, the Meat Board, the Special Products Board and other committees. Members of the staff have also been loaned to other administrative bodies, such as the Wartime Prices and Trade Board, the Combined Food Board, the Department of Labour, and various committees in the national and international fields.

The staff of the Division has also contributed to post-war planning. Its personnel serve on a number of committees and on request have undertaken various research assignments. A substantial part of the research program presently maintained by the Division is directed toward post-war developments.

Other Activities.—In addition to these activities, the Division in co-operation with the Dominion Bureau of Statistics, has assumed major responsibility in connection with the development of the Agricultural Outlook and the Agricultural Objectives or Goals program.

Three publications are maintained. One, the Economic Annalist now in its fifteenth volume, summarizes the results of research activities and is presently issued on a quarterly basis. Another, the Current Review of Agricultural Conditions in Canada, is published bi-monthly in co-operation with the Markets Information Section of the Marketing Service and the Dominion Bureau of Statistics, Department of Trade and Commerce. A third publication is being launched which will summarize developments in foreign agriculture.

AGRICULTURE AND FULL EMPLOYMENT

FRANK SHEFRIN

Prosperity, like peace, is indivisible. This is recognized in the recently tabled Canadian "White Paper" on Employment and Income,[1] which sets as the aim of all reconstruction policies "the extension of opportunity, welfare, and security of all the Canadian people".

The prosperity of farmers is determined by the efficiency of agricultural production and by the effective demand for agricultural produce, both at home and abroad, as reflected in both volume and level of prices paid. Full employment and a high income are prime factors in determining the degree of effective demand and the level of prices at home. This is particularly important in view of the fact that the domestic market absorbs annually about 75 per cent of Canadian farm production. Of course there are other factors as indicated above, but this article is confined to the narrow field of "agriculture and full employment".

We have learned in the twentieth century, with its two world wars and a great depression in a period of 30 odd years, that farm incomes rise and fall with city payrolls. In general, the higher the level of employment, the greater the total income of the non-farm working population and the higher the returns to farmers.

From the experience of the past few years, we know what large production fully matched by effective demand can mean to Canadian farmers. Total employment has increased from 3,693,000 persons in 1939 to 5,016,000, as of June 1, 1944.[1] National income has almost doubled from $4·5 billion in 1939 to $8·8 billion in 1943. As a result of increased earnings, food consumption at home has increased substantially. Prices for nearly all farm products are higher —the index of wholesale prices of farm products rose from 64·2 in September, 1939 to 103·3 in December, 1944.[2] Cash farm income is the highest in our history, totalling $1·8 billion in 1944.

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[1] Employment and Income with Special Reference to the Initial Period of Reconstruction. Presented to Parliament by the Minister of Reconstruction, April 1945. King's Printer, Ottawa.

Canadian farmers will enter into the post-war period with production geared for an output well above the pre-war level. As additional labour and farm machinery become available to farmers, these added resources will further increase Canada's capacity to produce agricultural commodities for the market.

The issue is not whether Canada can produce more, nor whether the people of this and other countries will need for their well-being in the immediate years of peace all of the farm products that can be produced. The real question is whether an effective demand can be maintained for our present agricultural production. The attainment of this objective is the core of an effective national agricultural policy.

The "White Paper" on employment and income, as presented to the House of Commons, lists some of the measures taken to maintain an effective demand for all goods including farm products. According to this document, the central task of reconstruction is "to accomplish a smooth orderly transition from the economic conditions of war to those of peace and to maintain a high and stable level of employment and income".

By a high and stable level of employment and income, the paper means no less than "full employment". At the same time, it is pointed out that "employment and incomes will be subject to fluctuations in the sphere of international trade, which cannot be wholly and instantaneously offset, and that seasonal fluctuations, resulting from climate and buying habits are not to be overcome without much patient and resourceful work". It also recognizes the need for a high degree of productive efficiency as the best means of achieving and maintaining a desirable level of income and a correspondingly high standard of living.

The report divides the future so far as reconstruction is concerned into two periods. The first of these is called Stage 2 of the war beginning at the cessation of hostilities in Europe and extending to the time when complete victory has been won in the Pacific. Only for this period are the specific applications of reconstruction policies set out. During this stage, wartime powers will be maintained by the Government. The second period, referred to as the post-war period, begins when final victory in the Pacific has been achieved. For this stage, in many cases, only broad lines of policy can be established.

Sources of Employment and Income.—Remunerative employment and income are provided by expenditures which are made. These expenditures are best classed according to the channels through which they flow:

(*a*) Export trade;
(*b*) Private investment in durable goods and goods in stock;
(*c*) Consumption expenditures;
(*d*) Public investment and expenditures.

In maintaining a high and stable level of employment and income, it is proposed that the Government influence expenditures in all these channels if necessary.

The program of economic activity for Stage 2 or the initial period of reconstruction as outlined in the "White Paper" calls for:

(1) the employment of some 900,000 persons over the level of 1939 (3,693,000); as each year passes after June, 1944, this figure will be increased by about 60,000, in other words, by the natural increase of population;

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[1] Including persons in the armed forces but excluding women in agriculture.
[2] Basis of index: 1926=100.

(2) post-war exports of not less than \$1¾ billion annually at current prices for merchandise and non-monetary gold; while this will be about half the current swollen wartime exports, it is only about 60 per cent above the pre-war level in dollar value and only 15 per cent higher in the amount of goods exported;

(3) reduction in taxation and development of a fiscal policy to encourage private investment; the Government, through the Department of Reconstruction, will encourage and assist the speedy conversion and expansion of industries;

(4) public investment expenditures by the Dominion, provincial and municipal governments; planning of public projects and development in co-operation with the provinces of expenditures on development and conservation of natural resources; the creation of a "shelf" of desirable public investment projects for implementation in the post-war years.

(5) housing program; subject to war requirements, the Government plans to encourage and use its wartime controls to assist in the production of material and equipment for a total program of not less than 50,000 units in the first full construction year following the end of the European war; the report recognizes that this figure will fall short of what is desirable but it will probably be as high as available labour and materials can produce.

To implement the program in Stage 2, it is proposed to direct manpower and resources released by the cessation of the war in Europe and by the reduced military requirements as follows:

(1) to contribute through international arrangements to the relief and rehabilitation of devastated countries;

(2) to the maintenance and resumption of exports to Canada's historic markets and as supplies and shipping permit to the development of new and continuing markets;

(3) to the re-conversion of industrial capacity released from war use and to the carrying out of desirable industrial expansion and modernization;

(4) to the replacement and modernization of the equipment of agriculture and other primary industries and to the provision of additional facilities for production and marketing services;

(5) to providing for as large a Housing Program, both rural and urban, as available labour and materials will permit; to provide for increases in consumer goods, produced for civilian market, as the demobilized armed forces pass into the civilian population and as circumstances allow, to meet deferred civilian demand.

Steps to be Taken to Attain a High Level of Employment

Export Trade.—The problem of the level of exports, other than of munitions of war in Stage 2, will be one of supply and finance. Financial provisions for some exports have already been made through UNRRA. The Government proposes to recommend continuation of Mutual Aid to the United Nations where necessary until the end of the war in the Pacific. Under the Export Credits Insurance Act, the Government is authorized to extend and guarantee credits to other Governments for financing Canadian exports. For certain exports, especially of food products, wartime contracts are being continued into Stage 2 of the war. Wartime collaboration in the allocation and shipment of products in short supply will be continued through the Combined Food Board, the Combined Production and Resources Board, and the United Maritime Board. The report recognizes that since trade must ultimately mean exchange for goods, Stage 2 must be used to build up Canadian imports and the exporting capacity of other countries so that we may ultimately receive imports in payment for our exports.

In the post-war period, it is intended to press actively for a wide collaboration in the reciprocal reduction and removal of trade barriers. Much importance is attached to the reconstitution of multilateral trade. Having this in mind, the draft agreements on the International Monetary fund and the United Nations Bank for Reconstruction and Development worked out at Bretton Woods are endorsed.

Assistance to Private Investment.—To facilitate and encourage private investment during Stage 2, the Government will make special tax adjustments. It will also encourage an immediate housing program. In Stage 2 and the post-war period, to provide credit for the establishment and expansion of industrial enterprises in circumstances in which lending institutions have hitherto been unable to provide adequate financing, the Industrial Development Bank has been established. Its facilities are of importance for small and new enterprises. The improvement of buildings and equipment on farms for increasing productive efficiency and adding to the amenities of farm life is a field of private investment to which special importance is attached. Maintenance of farm incomes will be the most effective encouragement to this type of expenditure. To supply credit for the above expenditure, the Farm Improvement Loans Act has been passed providing through the chartered banks under limited government guarantees, loans for a wide range of farm improvements. Encouragement under the National Housing Act will enable the building of homes in the cities and on the farms.

Maintenance of Consumption.—Measures to stimulate consumption expenditures will not likely be needed until the end of the war in the Pacific. There may however, be possible dislocations related to demobilization and international trade against which incomes require protection. Parliament has enacted statutes which, aside from their long term effects, will go far in meeting these needs during Stage 2. Some of these are: the Unemployment Insurance Act, 1940, the Family Allowance Act, 1944, and the Agricultural and Fisheries Price Support Acts, 1944.

Also in the post-war period, there may be further development of additional social security measures such as contributory Old Age Pensions and Health Insurance. The Government proposes by research, education, improvement of marketing methods and facilities, and by such other means as are necessary, to foster the improvement of Canadian standards of nutrition. This proposal is in line with the United Nations Conference on Food and Agriculture recommendations at Hot Springs in 1943.

Public Investment Program.—The report indicates that during Stage 2 the Government will plan its own deferred works and invite the provinces and municipalities to do the same.

In the post-war period, the deliberate use of public investment expenditures as a permanent instrument in employment will be undertaken.

Scientific Research.—It is proposed to continue and to expand after the war the work of the National Research Council and to co-ordinate it more closely and effectively with the research work of the universities, other Government laboratories and industry.

Placement and Training of Workers.—A high overall demand for labour will not, of itself, provide jobs for all. The kinds of available work and the places where unfilled jobs exist will change with the seasons of the year and with the development of new consumer demands, new industries, new processes, and new materials. There must, therefore, be a high degree of mobility of labour as between occupations and between jobs and places. In preparation for the transition to peace and to meet the requirements of peace-time training, the Vocational Education Act, 1942, was passed authorizing the Minister of Labour to conduct in co-operation with the provinces or otherwise, training for persons discharged from the armed forces and persons whom the Unemployment Insurance Commission has directed to attend a course of training.

Fiscal Policy.—The "White Paper" recognizes that these broad proposals have for their object the maintenance of levels of employment and income greatly above those ruling before the war. These and other requirements will call for Government expenditures and revenues at higher than pre-war levels. The Dominion Government states that it will be prepared in periods when unemployment threatens to incur the deficits, and increases in the national debt resulting from its employment and income policy. The policy "will be to keep the national debt within manageable proportions, and maintain a proper balance in its budget over a period longer than a single year".

Application of the "White Paper" Policy to Agriculture

Some of the measures suggested and enacted have a direct bearing on the prosperity of agriculture. Briefly, they include:

Direction of additional labour and resources, (*a*) to the replacement and modernization of the equipment of agriculture and other primary industries and to the provision of additional facilities for production and marketing services, and (*b*) to provide for as large a housing program, both rural and urban, as available labour and material will permit.

Export trade is to be maintained through such activities as UNRRA, the continuation of Mutual Aid to the United Nations, the Export Credits Insurance Act, and the continuation of the wartime food contracts.

Guaranteed minimum prices are to be maintained under the provisions of the Agricultural Prices Support Act, 1944. This Act is designed to meet such contingencies as may arise out of changes in requirements or dislocations of trade which may affect adversely the markets for agricultural commodities. This measure will provide farmers with economic stability.

To encourage private investment on the part of farmers, the Farm Improvement Loans Act, 1944, and the National Housing Act, 1944, were enacted by Parliament.

To supplement private investment, a public investment program including conservation and development projects for farm lands is to be outlined.

A nutritional program is to be fostered which will raise the dietary standards of farm and non-farm people and also provide a broader market for domestic foodstuffs.

Vocational training is to be given to the farm population—a training which will consider those who are staying on the farm and those who are leaving the farm.

Research is to be promoted by the Government. This type of activity may lead to new use of and, in turn, new markets for farm goods.

Summary and Conclusion

The "White Paper" outlines an economic policy designed not only to mitigate depressions in the immediate and near future, but to attain "full employment". Domestic investment, both public and private, exports, and maintenance of consumer income are considered decisive for a high level of employment and income.

Why is full employment important for farmers?

The amount of money that urban people have to spend largely determines how good customers they are for farm products.

A high level of industrial production brings a large supply of needed commodities to farmers at reasonable prices.

"Full employment" provides job opportunities for those who are not needed in agriculture. Ever since Confederation, Canada has had a farm-to-city movement except for short periods. Whereas this country was once predominantly rural, now only a little over a quarter of the population lives on farms. Increased efficiency in farming, resulting in a greater output per man, has made available part of the farm population for other work. Many processes and services formerly performed by farmers on the farms, such as butter-making, slaughtering and chick hatching, have been transferred to urban centres. These and other factors have made the rural-urban migration a continuing process.

What can the agricultural industry do to assist in maintaining "full employment"? The following are suggestions of action that need to be fitted into an overall employment and production program:

The building of new farm houses and improvement of old ones.
The improvement of farm buildings.
The replacement of obsolete farm equipment.
A soil improvement program—drainage, irrigation, community pastures and reforestation.
The improvement of live stock.

It is obvious that the attainment of the goal of "full employment" cannot be achieved by legislation alone, nor by a single device or plan. The "White Paper" recognizes this difficulty and states that the achievement of a high level of employment and income "will require the effective working of a number of compatible policies, all directed to the same end . . . It must be an object of national endeavour. The active co-operation of all governments or groups in the country will be essential to success".

THE USE OF PRAIRIE LAND AND ITS CLASSIFICATION

C. C. Spence

The Use of Our Land

Land has many uses. It is used as building sites, as transportation ways, as recreation and hunting grounds, as a source of minerals, and for the production of forest, farm crops and livestock products. Of more direct concern to agriculture is the use of land in the production of crops and livestock. While a variety of farm products are produced in Canada, for the country is vast and spreads from a maritime clime through a continental to another maritime clime, the whole territory is within or north of the temperate zone, which sets a limit to the kinds of crops grown, and hence the use of the land agriculturally.

A Continental Climate.—The three provinces, Manitoba, Saskatchewan and Alberta, are inland and consequently the continental climate restricts still further the agricultural use of the land. In the pattern of land use established by nature, there exist two broad divisions, within and without a right-angled triangle. The hypotenuse of this triangle is the international border, and the longer arm runs from a point south of Brandon in southwestern Manitoba to an apex located on the Saskatchewan-Alberta boundary about 39 miles south of Lloydminster; the shorter arm terminates near Waterton in southwestern Alberta. With the exception of the partially sun-protected banks of wide valleys, and points of higher elevations, notably the Cypress Hills, where shrubs and trees grow, within the triangle the native vegetation is prairie grass. Along the arms of the triangle and without, groves of aspen trees appear, and farther away, northeast, north and west from the triangle these gradually merge into heavier growths of poplar, birch and evergreens, the latter chiefly pine and spruce of commercial value. Generally, species of grasses differing from those on the prairies within the triangle, grow between the aspen groves and throughout the more densely tree-covered woodland areas. Willows, too, occur in the transition between the grass and woodland areas and their occurrence is usually associated with a fairly dense native grass cover in well-drained depressional areas.

The vegetation is determined by the climate. The climate is characterized by fairly wide extremes of heat and cold, a relatively short growing season, and a semi-arid moisture condition. The effectiveness of both the temperature and the precipitation is influenced by latitude and by altitude. In the region bordering the outer fringes of the triangle to which reference has been made, (known as the park belt and the grey wooded soil zone) the duration of the frost-free period is generally shorter than in the regions within the triangle. There is not much difference in the precipitation of the regions within and without the triangle, but there is less rapid evaporation in the latter which makes this region less subject to drouth conditions, and consequently a characteristic difference in kinds of vegetation compared to the prairie region within the triangle.

Associated with the native vegetation and the climate are broad differences in the soil. Near the edges of the arms of the triangle but within, is the dark brown soil zone and well within is the brown zone. Near, but outside the arms is the black soil and this merges into the grey wooded soil and the forested zone. In general, the dark brown and brown soils of the prairies are fertile, the black soils of the park belt zone are very fertile; and while the soils of the grey wooded soil zones are less fertile than in the other zones, the location of this region in respect to moisture conditions is in some degree a compensating factor. On the whole, the country suffers from a lack rather than too much moisture, so that drainage is not a problem, except in some local areas. Topography and the presence of stones are big factors, physically, in determining the marginality of arable land. The surface varies from broad level and undulating plains to moderately rolling and steep ranges of hills.

Half-Century Experiment in Land Use.—For this whole area, the past fifty years may be thought of as one of exploration and experimentation to determine the highest or most profitable use for the land. There are three general uses—for cultivated crops, for grazing and for forestry. The course pursued whereby man has been discovering the proper use for the land may not have been always in the best interests of society, or even in some instances of his own; but this is a difficult matter upon which to pass judgment without a full knowledge of the purpose of the undertaking and a careful appraisal of the results of the action.

In the three prairie provinces there are roughly sixty-five million acres improved.[1] This is seventy per cent of the improved acreage for the whole of Canada. The estimated value of the field crops produced from the cultivated acreage in Western Canada in 1943 was over $700 million.[2] At the same time the estimated value of animals and animal products produced was another $700 million.[3] About one-third of this revenue was from cattle and sheep enterprises which are based on both a cultivated crop and grazing use of the land. From each of these two great uses was provided the raw material which brought in nearly $200 million of revenue in 1943 from dairy products, wool, beef and mutton. In all there was probably forty million acres of land utilized for grazing. In 1941 the estimated cut of forest products in the three prairie provinces was valued at $10½ million.[4]

There are only a little less than 300,000 farms and a rural population of nearly one and one-half million. There are nearly 750 incorporated villages, towns and cities together, which have an urban population of nearly one million; three of these are cities with a population of nearly 100,000 or more.

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[1] Census of Canada, 1931.

[2] Dominion Bureau of Statistics, Quarterly Bulletin of Agricultural Statistics, Volume 37, Number 3, October-December, 1944.

[3] Estimated from the ratio of sales to value obtained from farm management surveys and values of livestock given in Dominion Bureau of Statistics Quarterly Bulletin of Agricultural Statistics, Volume 37, Number 3, October-December, 1944.

[4] Canada Year Book, 1943-44.

The region as a whole, however, is a surplus producing one. In agriculture only the produce from the smaller part of the occupied land is consumed within the three prairie provinces; for the rest a market must be found outside, and for a goodly proportion of this outside of Canada. On account of geography and political boundaries, these outside markets are long distances away, and also, these products normally come into direct competition with like products from other countries which are not only as favourably located for the production of these but also for their marketing.

Lessons of the Past.—To successfully compete the land must be put and kept in its most profitable use. If society were to act as one, with superhuman wisdom, there would be an allocation of the acreage for the three general uses according to the greatest out-turn for the least effort and as determined by the demand for the products. The most fertile and readily cultivatable land would be used in crop production and the allocation of the acreage for the particular crop would be on the basis of the location most suited for its production. In this location climate would be one important factor. However, not one, but thousands of persons decide on the use of land and the needs of the individual will come first even though the action may not be in the best interests of society, or in the long run, of the individual.

The decision which had to be made by those who did ocupy virgin land was whether to leave it in its native state or break it up for the production of cultivable crops. If one were confined to the quarter section, or even the half section, which the settler was permitted to homestead and pre-empt, of the grassland plains within the triangle described, the most profitable use for the land was—and still is—in wheat production. This was true even for the less fertile soil. If the settler failed in attempting to grow wheat thereon, as many did, and was forced to abandon the land, it was not because he tried to grow wheat, but because he was ill-equipped by size of holding, capital and experience to succeed.

For a time, however, during the settlement of the prairies there were few areas which did not give some promise of a livelihood for the settler. Settlement in the main took place during the late nineties and the early part of this century, a period when moisture conditions were better than the long-time average has proved to be, and also a period when grain prices were rising. Certain areas which were broken up, were in southwestern Saskatchewan and southeastern Alberta, a region of semi-aridity. Whilst the wisdom of breaking up some of this land was questioned before the first migration of the settlers ended, it became evident during the comparatively dry spell of 1917 to 1920 it would have been better to have left it in prairie sod. This was definitely confirmed during the prolonged drouth of the thirties. The incidence of this drouth, however, fell on the other parts within this triangle as well, and along with depression prices for the small crops which were harvested seriously affected the life and the economy of the people within the area. The rancher as well as the wheat farmer was affected.

From the experiences of those years the plains farmer learned methods of cultivation which help to combat drouth; they learned the value of feed and money reserves; they will be better prepared to meet another drouth. A process of elimination has taken place. The small unit wheat farmer of an earlier day is being displaced. The operator of a larger unit, while in a better position to cultivate the submarginal land, is not forced to in order to make a living and there is a greater possibility of the submarginal land being allowed to revert to prairie sod for use as grazing.

Along the arms of the triangle described and immediately outside, which is partly within the dark brown soil zone and partly within the black, wheat is the principal crop grown though the coarse grains, oats and barley, compete more successfully than they do within the triangle. Precipitation is slightly higher than in the core of the dry area, and evaporation is much less rapid. Yields are at least one-third higher per acre and as would be expected there is considerably more land under cultivation. The pattern of cultivation is not as uniform, as in the south, and the pasture areas are more scattered, and less extensive. The few grazing leases in this region are small in contrast to those of the south. While there are farms which specialize in grain, generally the type of farming is more diversified than within the triangle; consequently the use of land is more varied.

Still more diversified and with greater emphasis on the production of livestock and livestock products relative to grain are the areas outside the borders of the triangle, within the black soil and approaching the grey wooded soil zone. Still higher grain yields are obtained here. Coarse grains offer even greater competition to wheat than in the other areas to the south, partly because coarse grains yield more heavily and partly because wheat is generally of lower quality than farther south. Both cultivated grasses and legumes grow more luxuriantly in this area than elsewhere. The native grasses which as elsewhere are the most important source of pasture, while less nutritious than on the plains, are a palatable and satisfactory fodder.

On unimproved land, besides the native parkland grass, clumps of aspen trees, black birch and willow shrubs characterize the black soil region, and these are more dense toward the outer rim and in the transition to the grey wooded soil zone. In the lower depressions there are dense stands of willow and evergreen, chiefly spruce and tamarack. On the upland, poplar and birch grow; and sometimes, usually on sandy ridges, jack pine grows. Generally the black soils are the most productive and except with land that is exceedingly rough and hilly, or poorly drained the land is most profitably used in crops.

Except in the low spots in the cleared land, or the bed of a dry lake, land in the grey wooded soil yeilds much less native forage for grazing animals than the parkland. Thus it, too, provided it is suitable for cultivation, is most profitably utilized in crop. While one cannot expect yields in this soil zone to be as high as in the black, the zone is as favourably situated for moisture and consequently some crop is no less assured. Usually, too, legumes may be readily established here to provide fodder in a type of farming similar to that carried on in the black soil region, and to improve the soil.

The most profitable use for the land in the grey wooded soil zone appears to be in the production of feed crops, and marketing these through livestock; although in a few areas, the production of legume seed has proved highly remunerative in some years. Wheat is a less satisfactory crop in this zone than elsewhere, the quality produced being definitely inferior.

Land Use for Wild Life and Forestry.—In the wooded zone, on the less fertile lands, tree growth is sparse and stunted, and bush grass grows in clumps. Such areas are both extensive plateaus with ridges of sand, and wide muskegs partially underlain with water. They would appear to be best used as habitations for wild life, and hunting ground by man. The best stands of merchantable timber, chiefly spruce and white poplar, are found on the more productive soils. Where such stands occur on land with topography rough and hilly, and generally unfavourable for cultivation, the permanent production of forest products is probably the highest use; and to keep such land in this use would appear to be a wise policy. Where timber stands occur on fertile land, with a topography favourable for cultivation, it is probable in the long run the most profitable use will be found in growing crops and producing animals, when the frontier is pushed farther back and agriculture comes into competition with forestry for the use of the land.

Submarginal Dry Land Made Productive.—But, for a time at least, there is an alternative to pushing the frontier back and having land now in forest give way to agriculture. This is by the bringing of more land in the "dry core" within the triangle under irrigation. Over one-half million acres of land in southern Alberta are now irrigated and it appears feasible to irrigate as many acres more. This can be made to produce twice the amount of agricultural products, and support double the number of people than would the more fertile and promising agricultural land of the north now under forest. This, too, from land which left in its native grassland state would yield far less than that now in merchantable timber, if the timber is properly husbanded and scientifically harvested.

Summary—Land Use.—In brief, agriculturally, the land of the three prairie provinces is used chiefly in producing grains and native forage. While the latter is grazed and marketed through live stock, it yields a lower gross revenue per acre than does the same unit in the production of grain for sale. In general, wheat is the major crop produced on the more fertile and arable lands of the plains, and is the highest use for such land. These plains were described as forming a triangle shaped region, the arms of which meet to form an angle at a point on the Saskatchewan-Alberta boundary about thirty miles south of Lloydminster. The probable best use for the less arable land is in the production of the nutritious native grass for grazing. Outside of the triangular region the native grass is less nutritious, but makes satisfactory pasture. It offers less competition, however, to the grain crops except where the land is rough, hilly and unattractive for cultivation. Of the grain crops, coarse grains, oats and barley, are relatively more important compared with wheat than within the triangle. Well outside the triangular shaped region the native vegetation offers even less competition to cultivated crops. The most profitable utilization of these crops is as live stock feed on the farm, and consequently the live stock numbers per unit of land occupied in these park belt and woodland soil regions are much greater than in the grazing areas of the plains.

An extension of this same type of agriculture more deeply into the woodland areas appears likely. Stands of timber are being harvested, and this at an accelerated rate during these war years. New farmer settlers in competing for space and a livelihood will clear the land and break it up. The more fertile and arable land will probably have a more profitable use in producing crops and livestock than under timber, but care should be exercised that the less arable be not stripped of its timber to make room for settlers before a more profitable utilization is demonstrated.

A Classification of Our Land

A Land Use Classification.—The broad pattern into which present and future plans of utilizing our land in Western Canada must fit has been described. This is also the framework for any classification of land designed to express its most profitable use. The economic classification of the land[1] which has been completed for twenty-four million acres within the triangular shaped region, sets out areas, using a unit as small as a quarter-section of land, which would be better used in grazing and those in which the most profitable use is in grain production. Average long-time wheat yields running back to 1921 are used as the basis of determining the relative productivity of the land; and in the regions classified, five land classes are set out in describing the areas on the basis of long time productivity.

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[1] "An Economic Classification of Land in Fifty-Six Municipal Divisions, South Central Saskatchewan", C. C. Spence and E. C. Hope, Economic Division, Department of Agriculture, Technical Bulletin No. 36; "Land Use Classification in the Special Areas of Alberta", A. Stewart and W. D. Porter, Economics Division, Department of Agriculture, Technical Bulletin No. 39 and "An Economic Classification of Land and Its Relation to Farm Income, Eyebrow-Lacadena Area, Saskatchewan 1939-40", C. C. Spence, S. Mysak and R. A. Stutt, Economics Division, Department of Agriculture, mimeograph publication; "An Economic Classification of Land in the Weyburn-Estevan Area, Saskatchewan, 1941", R. A. Stutt and S. Mysak, Economics Division, Department of Agriculture, mimeograph publication.

Marginality of Land.—The classification revolves around what constitutes land on the margin for wheat production. As noted wheat production is the most profitable or best use for the land on the southern plains. Such land is defined as that of a character which, in an average sized unit for the region, over a period of years will not return more than is required for maintenance and operating costs, the latter to include the farm family living. In other words, there is no surplus to service indebtedness or to accumulate savings. This average sized farm is a marginal unit because the land which it comprises is not capable of producing sufficient to provide for the usual operator earning a surplus above operating and maintenance costs. Land of this character is designated as Land Class II. Land which will not produce as much as Land Class II is designated Land Class I; such land is submarginal for wheat in an average sized unit and is probably better utilized in grazing. Land capable of producing more than Land Class II is above the margin for profitable use in wheat production and is designated Land Class III. Land Classes IV and V are capable of yielding even higher returns.

Areas Classified.—Of the section of the country which has been covered, all within the southern part of the triangle, and the maps published, fifty-two per cent of the land area has been classified Land Class I; eighteen per cent Land Class II; twenty-one per cent Land Class III; seven per cent Land Class IV; and slightly less than two per cent Land Class V. One-half of that rated as Land Class I, or submarginal for wheat production, is in the special areas of Alberta.

History of Classification and Significance.—The basis of this classification was set up following introductory studies begun in 1935 of the economic and social problems associated with the utilization of our lands. The early economic surveys covered areas in south central Saskatchewan and the special areas of southeastern Alberta—areas where the incidence of drouth during the thirties fell most severely, and agricultural problems became most acute. It was from studies of farms in these areas that marginality of land in wheat production was determined, and also the relative productivity of that which is less and more productive, (below and above the margin) and thus the various classes of land established.

The highest land class set out in the areas of southern Saskatchewan and Alberta for which mapping has been completed is Land Class V. Parcels of this class are found in larger blocks in the classified area of Saskatchewan at the southern and western edge of the Regina Plains, on the heavy textured soils adjacent to Assiniboia, in the vicinities of Cabri and Lacadena in the central southwest. The average yield on the heavy clay textured soil in these areas for a sixteen year period, from 1921 to 1936, was about 15 bushels per acre, including both stubble and fallow seeding. Yield, however, is only one factor in the determination of the potential productivity of a parcel of land. The number of acres arable is another. Land Class V parcels in the area classified are practically one hundred per cent cultivatable, of level to undulating topography, well drained and free from stones.

In a study of the "surplus" earnings above maintenance and operating costs, of 254 owner-operated farms in the Eyebrow-Lacadena area,[1] in central southwest Saskatchewan for the year 1939-40, the average surplus for 61 farms on Land Class V was over $2,000, and for 47 farms in Land Class II was "O". The farms in each class averaged approximately three quarters, the average for south central Saskatchewan, the unit used in determining what kind of land constituted a marginal unit in wheat production. This reference to the study of farm incomes in the Eyebrow-Lacadena area is intended to indicate the significance of the classification in describing the relative opportunities for earning income in the different land classes.

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[1] "An Economic Classification of Land and its Relation to Farm Income, Eyebrow-Lacadena Area, Saskatchewan, 1939-40", C. C. Spence, S. Mysak and R. A. Stutt.

Extension of Classification.—In subsequent studies made in other areas of Saskatchewan and Alberta in order to extend the economic land classification, at least two fairly large areas have been found where the average yield of wheat for the same sixteen-year period used as the basic period for determining marginality of lands was three to four bushels higher than obtained on heavy textured soil in regions previously studied and classified as Land Class V. Parcels in these more recently studied areas are quite comparable, too, in degree of arability. One of these areas is the Rosetown-Elrose plains, where the soil is a heavy clay in the dark brown soil belt; the other smaller area of silty clay loam lying adjacent to Pincher Creek in southern Alberta in the shallow black soil belt. In both areas wheat production is the most profitable use for the land, and it would seem a land class above V, perhaps Land Class VI, will need to be established to designate correctly many of the parcels in these two higher yielding areas, on the basis of their relative "surplus" earning capacity.

This is a classification based on the relative productive capacity of the land in its most profitable use which within the triangle described in Part I is "wheat". It is obvious that as the outer edges of the triangle are reached where coarse grains are as important as wheat in the cropping plan of the farms, and more so in the woodland areas, and associated with this cropping practice is a crop-livestock economy, greater revenue per unit of land may be expected than that reflected alone in wheat production. Climatic conditions along with the land make this possible.

The net returns, as referred to in the foregoing as surplus above farm maintenance and operating costs, in the same sized unit as that used in establishing marginality of land in wheat production, for the more productive land in the northern region may indicate the need of a still higher class than Land Class VI. It would appear, too, that a marginal farm unit in this general region (nearer the two sides of the triangle) would differ in physical characteristics of the land, as well as farm organization, to that determined as marginal in the southern region. All of which points to the need of some adjustments to the classification structure designed primarily to give an economic rating to land in a region where its most profitable use is in wheat production, if it is to be applied to give relative ratings to land in other regions, which is more profitable in some other use.

Preparation for Extension of Classification.—To this end studies of farm businesses were conducted during the years of 1943 and 1944 in areas west of Saskatoon, Saskatchewan, and in the Gadsby, Drumheller and Innisfail areas of Alberta. The Saskatchewan areas lie just inside the apex of the triangle. One of the Alberta areas is located within the triangle, the second extends across one side, and the third area outside the triangle. In all, about 800 farms were included in these studies.

Eventually the economic land classification will be extended into the woodland regions. During the years 1941, 1942 and 1943, studies of farm businesses were conducted across northern Saskatchewan, in northeastern Alberta, in west central Alberta and in the Peace River Block. In this series of studies approximately 1,700 farms were visited. The studies of these farms and farm businesses were made in order to measure the financial progress which the settlers in the pioneer fringe had been able to make and to isolate the factors favourable to progress, with the objective of being able to advise people to be settled on like land in similar areas. It is believed that the material assembled in the study of these pioneer farm businesses will provide the initial step in the preparatory study of any further adjustments in the land classification technique used on the plains needed for the extension of the economic classification of the land into the woodland regions.

Summary of Land Use Classification.—In summary, this classification attempts to rate units of land possessing like physical characteristics according to what man in a usual situation may normally expect to derive therefrom. In it, an attempt is made to co-ordinate information on the physical characteristics with the economic and give expression thereto. The economic pertains to the use of land.

WHEN IS HOG PRODUCTION PROFITABLE?

H. K. Leckie

Probably the best known indicator of the relative profitability of hog production is the hog-barley ratio. Unfortunately, while the latter is commonly used it is less often fully understood. Certainly the average hog producer couldn't define the hog-barley ratio, although consciously or unconsciously he is affected by it. When the ratio is high, he plans to step up production—when it is low, he plans to cut down.

It is the purpose of this article to briefly review what the barley-hog ratio is, how it acts, what its shortcomings are, and finally to suggest an alternative yardstick.

The hog-barley ratio simply indicates the number of bushels of barley which are equal in value to a hundred pounds of live hog. In actual practice, the ratio is calculated on a Winnipeg basis, using current prices for No. 1 feed barley and B1 grade hogs. The following shows the calculation of the ratio for the month of February, 1945:

Average price of Grade B1 dressed hogs, Winnipeg........	$16.49 per cwt.
Plus Dominion premium of $2.00 per head...........	1.33 " "
Total........................	$17.82 " "
Equivalent live price (75 per cent of dressed)......	13.36 " "
Average price of No. 1 feed barley, Winnipeg basis......	57·8 cents per bu.
Plus Dominion advance equalization payment........	15·0 " " "
Total....................	72·8 " " "

Hog-barley ratio: 13.36 ÷ 72·8 = 18·3

In other words, taking into account both the government hog premium and the advance equalization payment on barley, at the present time at Winnipeg 18·3 bushels of barley are equal in value to 100 pounds of live hog.

The next question that arises is whether a ratio of 18·3 is relatively favourable, unfavourable, or about average. The usual practice is to compare the ratio with the average over some previous period of time usually a number of years. Average hog-barley ratios during various periods are as follows:

Long-time average	1913-40............................	17·4
Average	1926-29............................	16·6
"	1935-39............................	21·5
Wartime average	1940-44............................	20·9

Table 1.—Average Yearly Hog-Barley Ratios 1913–44

Year	H/B Ratio	Year	H/B Ratio	Year	H/B Ratio
1913.................	21·0	1924.................	11·5	1935.................	24·2
1914.................	16·4	1925.................	15·9	1936.................	19·3.
1915.................	13·0	1926.................	22·7	1937.................	13·6
1916.................	14·7	1927.................	13·2	1938.................	22·8
1917.................	14·0	1928.................	13·2	1939.................	27·6
1918.................	14·8	1929.................	17·3	1940.................	24·9
1919.................	16·6	1930.................	37·3	1941.................	21·3
1920.................	12·8	1931.................	27·0	1942.................	20·7
1921.................	17·9	1932.................	14·1	1943.................	19·4
1922.................	21·4	1933.................	17·8	1944.................	18·2*
1923.................	18·9	1934.................	19·3		

* With allowance for hog premium and advance equalization payment on barley.

It will be noted from table 1 that the ratio reached a high spot of 37·3 for the year 1930. Actually in November of that year 100 pounds of hogs were equal in value to 66·4 bushels of barley. This resulted from the sharp drop in grain prices which occurred earlier than a corresponding sag in hog markets. Due to the extraordinary fluctuation of the ratio in 1930, this year is normally left out of the calculations in determining a long-time average.

In the year 1920 the ratio reached a low point of 10·3 in July, when comparatively high prices for grain more than counterbalanced $20.00 hogs. This was the reverse of the situation which developed 10 years later.

It is rather significant that the sharp increases in hog production which have occurred in wartime, climaxed with a record slaughter of 8,766,000 head in 1944, have been accomplished with the hog-barley ratio at rather modest levels. While it is true that in the summer of both 1939 and 1940 the ratio rose above 30·0 due to the improved prices for hogs in relation to coarse grains, since the autumn of 1940 the ratio has remained closer to the 20·0 mark. The spectacular wartime increases in hog production have resulted not so much from an extremely favourable hog-feed ratio as from the high degree of stability afforded to hog prices by the export bacon agreements. At the outbreak of the war plenty of surplus grain was available, and when a demand for large quantities of pork products developed, farmers turned to hog production as a ready and profitable outlet for surplus feed grain.

In the latter half of 1943 the addition of the advance equalization payment of 15 cents per bushel on barley sold off farms in Western Canada had the effect of lowering the hog-barley ratio so far as the farmer who had surplus grain to sell was concerned. It did not of course affect the position of the farmer purchasing feed grain. Since January, 1944, substantial government premiums on Grade A and B1 hog carcasses have helped to restore the balance in favour of marketing grain through hogs.

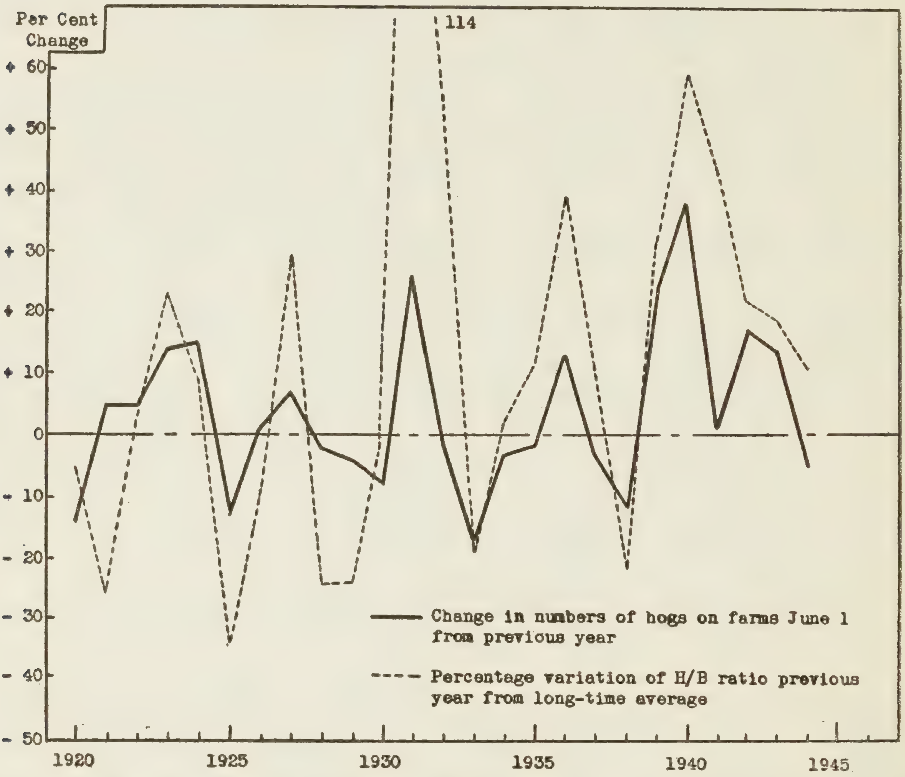
TABLE 2.—HOG BARLEY RATIO BY MONTHS, 1939 TO DATE

—	1939	1940	1941	1942	1943	1944	1945
January	29·2	20·5	21·4	19·8	21·5	16·8	18·3
February	30·9	20·0	20·4	20·0	21·4	18·2	18·3
March	31·7	20·7	17·6	19·8	22·1	18·2	....
April	27·7	18·8	17·7	19·6	21·8	18·2	....
May	25·2	24·1	21·0	18·9	21·8	18·3	....
June	30·1	30·9	22·0	18·4	21·0	18·3	....
July	34·9	31·5	23·1	19·5	20·6	18·3	....
August	30·7	32·2	24·9	21·5	16·3	18·3	....
September	22·1	30·7	22·1	21·2	16·2	18·3	....
October	23·3	25·7	22·3	23·2	16·1	18·3	....
November	24·0	20·8	22·4	23·5	16·6	18·3	....
December	21·1	23·2	21·1	23·3	16·8	18·3	....
Yearly Average	27·6	24·9	21·3	20·7	19·4	18·2	....

NOTE:—Since August 1, 1943 advance export equalization payments of 15c per bushel on barley, and since January 24, 1944 Dominion quality premiums of $3.00 on Grade A hogs and $2.00 on Grade B 1 hogs, have been in effect. Since these extra payments above the market price affect hog producers, they have been taken into account in calculating the hog-barley ratio.

The close relationship which has prevailed between hog production and the hog-barley ratio is brought out in the accompanying chart. The upswings and downswings in the numbers of hogs reported on farms at June 1 over a period of years has corresponded very closely to the fluctuations in the hog-barley ratio. Changes in hog marketings follow changes in the ratio at an interval of 12 to 18 months. For this reason the relationship depicted in the chart is between changes in the number of hogs reported on farms at June 1 each year, and the relative position of the hog-barley ratio during the preceding calendar year. Since feed is the largest single item in hog production the relationship of feed prices to hog prices is a major factor in hog production trends. However there are certain other factors which must also be taken into account, so that the trend of hog numbers cannot be forecast with 100 per cent accuracy merely by watching the hog-barley ratio during preceding months.

RELATIONSHIP BETWEEN CHANGES IN HOG NUMBERS AND THE HOG-BARLEY RATIO



The less than perfect correlation which has existed between the hog-feed ratio and hog production trends, indicates:

(1) That other factors, including the over-all supply of feed in relation to live stock populations and the relative price of other farm products, have considerable influence on hog production prospects.

(2) That as the price of barley advances, hog prices must show a relatively greater increase, to make the barley-hog ratio sufficiently attractive to induce grain growers to market at least part of their grain through hogs, rather than accept a straight cash price.

One factor in the hog-feed relationship which seems worthy of note, is the changing relationship between the cost of production of grain as compared to hogs. During the past two decades, the rapid development of farm mechanization, the introduction of improved varieties of grain and the utilization of better cropping practices have undoubtedly assisted in lowering grain production costs per bushel. While there have been improvements in swine breeding and swine husbandry, it is probably correct to assume that grain production costs have been reduced to a greater extent than hog production costs. This is particularly true in a period when labour is short in supply and high in price. This would suggest that under present day conditions, hog production stability could hardly be achieved unless the hog barley ratio were maintained well above the long-time average, particularly if grain prices and farm costs stay anywhere near 1944 levels.

As indicated, while the hog-barley ratio has in the past been very useful to statisticians in forecasting hog production trends, it has certain shortcomings. It is not readily grasped by the layman. It deals with live hog prices whereas carcass grading was adopted exclusively in October, 1940 and hog price quotations in Canada are now on a dressed weight basis. The ratio is often misunderstood—for example, the long-time average of 17·4 has sometimes been interpreted to mean that 17·4 bushels of barley are required on the average to produce 100 pounds of pork, which of course is not what is intended.

In an endeavour to overcome some of these defects, an indicator which might be called the hog-feed margin has been calculated. This is not designed to entirely supplant the hog-barley ratio, but at least provides an alternative measuring rod, and overcomes some of the disadvantages of the older ratio.

We have assumed that 21 bushels of barley provides sufficient raw feed to produce a 200 pound pig, which at slaughter yields a 150 pound carcass. On this basis, to produce 100 pounds of dressed carcass, 14 bushels of barley would be required. It follows that a useful comparison might be made between the value of 100 pounds of dressed hog and 14 bushels of barley. By subtracting the current market value of 14 bushels of barley from the current value of 100 pounds of dressed carcass, we obtain what might be termed the hog-feed margin, or in other words the gross spread between hog prices and feed costs.

This calculation for the month of February, 1945 would be as follows:

Average price of Grade B 1 dressed hogs, Winnipeg........	$16.49	per cwt.
Plus Dominion premium ($2.00 per hd.)..................	1.33	" "
Total	$17.82	" "
Average price of No. 1 feed barley, Winnipeg basis........	57·8c	per bu.
Plus Dominion advance equalization payment.............	15·0c	" "
Total	72·8c	" "

Value of 14 bushels at 72·8c = $10.19
Hog-feed margin .... $17.82 — $10.19 = $7.63 per cwt.

This simply means that the hog feeder had a gross margin of $7.63 on each 100 pounds of dressed hog, or $11.14 per 150 pound carcass. From this margin would have to be deducted all other expenses of the hog enterprise including labour, overhead, housing and veterinary. The hog-feed margins for various periods follow:

	Per cwt.	Per Hog
Long-time average — 1922-24	$5.25	$7.87
Average 1926-29	4.63	6.95
Average 1935-39	5.46	8.19
Wartime average 1940-44	6.78	10.17

TABLE 3.—AVERAGE YEARLY HOG-FEED MARGIN, 1922–44

Year	H/F Margin	Year	H/F Margin	Year	H/F Margin
1922..............	$7·16	1930..............	$9.46	1938..............	$6.68
1923..............	4·93	1931..............	4.79	1939..............	6.95
1924..............	.65	1932..............	1.24	1940..............	6·08
1925..............	5.69	1933..............	2.46	1941..............	6·20
1926..............	8.52	1934..............	4·68	1942..............	7.08
1927..............	2·60	1935..............	6.10	1943..............	7.09
1928..............	2.08	1936..............	4.91	1944..............	7.44
1929..............	5.33	1937..............	2.67		

Table 3 indicates the variations in the hog-feed margin which have occurred over a period of years. A comparison with table 1 reveals that the variations in the hog-feed margin have followed the same general trend as the hog-barley ratio, although the relative position in certain years is somewhat different. The margin was very low in 1924 (65c) and very wide in 1930 ($9.46).

Table 4.—Hog-Feed Margin by Months, 1939 to Date

—	1939	1940	1941	1942	1943	1944	1945
January	7·30	5·59	5·28	6·52	7·90	6·11	7·59
February	7·95	5·43	4·95	6·70	8·01	7·45	7·63
March	8·02	5·63	4·23	6·65	8·46	7·49	....
April	6·93	4·63	4·27	6·50	8·21	7·52	....
May	6·48	5·84	5·19	6·24	8·20	7·54	....
June	7·64	6·84	6·41	6·07	7·93	7·58	....
July	8·44	7·00	7·51	6·56	7·78	7·59	....
August	6·82	7·20	7·84	7·26	5·63	7·59	....
September	5·92	7·36	7·17	7·08	5·53	7·59	....
October	5·98	6·58	7·26	8·38	5·45	7·59	....
November	6·24	5·19	7·32	8·49	5·88	7·59	....
December	5·68	5·65	6·92	8·45	6·11	7·59	....
Yearly Average	6·95	6·08	6·20	7·08	7·09	7·44	....

As shown in table 4, the hog-feed margin has remained comparatively wide during the period of the war. At the present time the margin appears more favourable relatively than the hog-barley ratio. Part of the answer of course is that other production expenses, such as labour and overhead have also advanced considerably, and it is probable that the net margin of profit is not much wider, if any, than in the 1935-39 period. In the absence of complete and accurate hog production cost data, however, the gross hog feed margin seems to provide a fairly good indicator of the relative position. At least it may be a useful measure to supplement, rather than entirely supplant, the hog-barley ratio. Relatively simple to calculate, expressed in dollars and cents along the lines producers think, rather than as a ratio, it provides another convenient method of appraising hog production prospects.

SIZE OF CO-OPERATIVE BUSINESS IN CANADA

A. E. Richards

A directory of co-operatives in Canada compiled this year by the Economics Division, Department of Agriculture, indicates that ten out of a total of 2,044 associations reporting their volume of sales of farm products, supplies and merchandise for the crop year 1943-44, have an annual volume of business in excess of $10 million. Out of the total, 1,319 associations, or 64·5 per cent show a business of less than $50,000 during the year, and 884 associations, or 43·2 per cent fall below the $25,000 mark.

The activities of a number of the larger co-operative business organizations have developed into what might be termed "big business" and have received world-wide recognition but there are hundreds of comparatively small organizations which are quietly and effectively serving local areas throughout the Dominion. Regardless of size, the associations classified as co-operatives in this summary were organized on a co-operative basis and large or small are operating under the same set of co-operative principles. The term "co-operative association" is given a broad interpretation. The test applied has been as to whether ownership and control of the business rests with those who use it.

The number of co-operatives listed in the directory, classified by provinces and by volume of business, is set out in Table 1. An accurate estimate of the volume of business by provinces or for all Canada cannot be made from these data alone. Associations doing business on a national or interprovincial scale are listed under the province in which the head office is situated, for example, the Canadian Co-operative Wool Growers Limited markets wool from all provinces but as its head office is in Toronto, it is listed under Ontario. There is considerable duplication in volume of business, as the business of both central and local associations is shown in this table.

TABLE 1.—CO-OPERATIVE ASSOCIATIONS IN CANADA CLASSIFIED ACCORDING TO VOLUME OF BUSINESS

Dollar volume	Total No.	Total Per cent
Under 25,000	884	43·2
25,000— 49,999	435	21·3
50,000— 99,999	323	15·8
100,000— 199,999	210	10·3
200,000— 299,999	50	2·4
300,000— 399,999	42	2·1
400,000— 499,999	14	0·7
500,000— 999,999	41	2·0
1,000,000—9,999,999	35	1·7
10,000,000 and over	10	0·5
Totals	2,044	100·0
Unknown (including new incorporations)	575	
Grand Total	2,619	

Associations included in Table 1 are confined to marketing and purchasing co-operatives. Credit unions or people's banks, mutual fire and hail insurance companies, mutual telephone companies and housing associations are omitted. Omitted also are livestock improvement associations, agricultural societies, farmers' institutes and organizations for purely social and educational purposes.

TABLE 2.—PRODUCTS MARKETED, MERCHANDISE AND SUPPLIES HANDLED BY CO-OPERATIVE BUSINESS ORGANIZATIONS IN CANADA, CROP YEAR ENDED JULY 31, 1943

—	Associations	Value of sales
	No.	$
Marketing—		
Dairy products	446	44,296,347
Fruits and vegetables	161	19,505,146
Grain and seed	105	134,239,789
Live stock	225	62,839,589
Poultry	194	10,923,819
Honey	6	530,180
Maple products	7	1,137,980
Tobacco	10	18,957,319
Wool	7	1,988,880
Fur	2	761,014
Lumber and wood	7	142,139
Miscellaneous	14	177,072
Total, Marketing	853	295,499,274
Merchandising—		
Food products	518	12,616,807
Clothing and home furnishings	229	2,239,825
Petroleum products and auto accessories	500	9,878,611
Feed, fertilizer or spray material	625	19,281,830
Machinery and equipment	125	479,958
Coal, wood and building material	413	4,911,407
Miscellaneous	535	6,280,703
Total, Merchandising	1,248	55,689,141
Grand Total	1,675	351,188,415

The range of commodities marketed and merchandised by co-operative associations during the crop year ending July 31, 1943 is shown in Table 2.

Duplication in numbers of co-operatives must be recognized in interpreting these data in that co-operatives may market dairy products and poultry for its members and may also purchase petroleum products and fertilizer.

The grain growers are the most completely organized of the commodity co-operative marketing groups; approximately 43 per cent of all commercial marketings of grain were handled through co-operatives. Organizations of livestock producers handled 17 per cent of the total commercial marketings of cattle, calves, hogs, and sheep and lambs. Co-operatives are credited with about 14 per cent of the total sales of fluid milk and manufactured dairy products and roughly 35 per cent of the fruits and potatoes marketed. Marketing co-operatives handled approximately 24 per cent of the main farm products entering commercial channels of trade.

Reported membership in co-operative business organizations in Canada in the 1943-44 crop year was 585,826. Here again duplication must be kept in mind in interpreting total co-operative membership figures. Some Canadian farmers market the entire output of their farms on the co-operative plan. A farmer may deliver his grain to a co-operative elevator, live stock to a livestock shipping association and milk to a co-operative dairy. He may also purchase a large proportion of his farm supplies and household necessities from a co-operative store, for tractor fuel and gasoline he goes to his nearest co-operative oil station.

A useful measure of co-operative activity on a regional basis is obtained by dividing the total amount of co-operative marketings for an area by the number of farms which it contains as reported in the last census. On this basis for the crop year 1942-43, British Columbia led all provinces with average marketings of $642 per farm, Saskatchewan was in second place with $621 per farm, Manitoba $553, and Alberta $461. The average for Canada as a whole was $403. During the past twelve years, the annual average for all of Canada was $233 per farm. Farm products marketed co-operatively in Saskatchewan in the twelve years have averaged $383 annually per occupied farm. British Columbia ranked second with $338, Alberta was third with $315, and Manitoba stood in fourth place with $268 of co-operative marketings per farm.

SUBSIDY PAYMENTS MADE BY THE DOMINION DEPARTMENT OF AGRICULTURE

During the twelve months of 1944, the Dominion Department of Agriculture paid out in subsidies and bonuses over 104·5 million dollars. Some of the subsidies were direct cash payments to farmers, for example, wheat acreage reduction, milk, butterfat, cheese. Some of the subsidies were indirect, for example, feed and fertilizer assistance. With the exception of the bonus on cheese quality, assistance to cheese factories and the Prairie Farm Assistance payments, all subsidy payments are a direct result of wartime economic conditions.[1]

Subsidies and Farm Cash Income.—Estimates of farm cash income as prepared by the Agricultural Branch of the Dominion Bureau of Statistics are "cash income from the sale of farm products" and include bonuses or subsidies paid by the Dominion or Provincial Governments to farmers for the production of the commodities subsidized. Payments under the Prairie Farm Assistance Act,[2] the Prairie Farm Income Act and the Wheat Acreage Reduction Act have not been included. Specifically, the following payments are included in the cash income estimates.

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[1] See article "Agricultural Policy: Subsidies and Bonuses 1943" Economic Annalist. Feb. 1944, p. 4.

[2] Under the P.F.A.A. farmers contribute to the fund. A levy of one per cent of the purchase price is imposed on all wheat marketed.

SUBSIDIES PAID OUT BY THE DOMINION DEPARTMENT OF AGRICULTURE—1944[1]

—	Canada	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
	$	$	$	$	$	$	$	$	$	$
1. Fluid Milk	12,818,405	56,515	613,252	340,881	3,267,597	5,705,337	655,351	323,036	632,236	1,224,200
2. Butterfat	24,165,855	319,111	554,926	572,585	6,650,977	6,000,422	2,574,280	3,972,994	3,100,442	420,118
3. Concentrated Milk	2,078,419	...	11,012	...	467,124	1,387,993	7,047	5,283	73,055	126,905
4. Milk—Cheddar Cheese	4,329,999	23,449	...	24,768	1,424,560	2,612,035	102,581	23,052	94,082	25,472
5. Cheese—Bonus on Quality	1,591,700	...	...	7,177	438,213	1,117,928	9,051	1,222	9,443	8,666
6. Cheese—Factory Improvement	87,906	...	...	...	69,224	18,477	...	...	205	...
7. Hog Premiums	14,069,228	132,567	43,790	87,702	1,314,827	3,967,576	1,163,099	2,816,499	4,461,714	81,454
8. Fertilizer Subventions	412,664	43,524	25,090	79,819	140,788	95,335	...	...	...	28,108
9. Lime Subsidy	271,894	24,054	44,129	65,635	133,065	2,390	...	...	...	2,621
10. Feed Freight Assistance	14,565,607	321,071	1,173,658	817,972	5,389,630	5,387,922	...	...	...	1,475,354
11. Alfalfa Meal	52,304	...	...	...	...	...	...	...	...	...
12. Feed Wheat Drawback	7,700,554	131,931	338,529	210,816	1,983,993	3,028,615	220,136	79,052	731,041	976,441
13. Feed Assistance: Plan A	521,510	...	...	...	...	...	...	...	...	...
Plan B	362,136	2,612	9,948	14,017	117,153	218,406	...	...	...	...
14. Wheat Acreage Reduction	8,979,711	...	...	...	...	...	705,735	5,340,448	2,933,528	...
15. Prairie Farm Assistance	9,456,859	...	...	...	...	...	16,673	6,906,864	2,533,322	...
16. Prairie Farm Income	1,318	...	...	...	...	...	204	283	831	...
17. Canning Crops[2]	2,549,074	...	...	...	...	...	...	...	...	...
18. Berries for Jam	473,300	...	...	...	...	...	...	...	...	...
19. Wool[3]	64,518	641	4,507	538	927	...	...	...	57,905	...

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[1] Preliminary, subject to revision.

[2] Payments in the Maritime Provinces $12,570; Quebec, $397,840; Ontario, $1,869,061; Prairie Provinces, $66,923; British Columbia, $202,680.

[3] Partial Payments.

Dairy Products.—Prices received by farmers and used for cash income estimates for milk sold to distributors, cheese factories and condenseries and butterfat sold to creameries include the various price subsidy payments which have been paid by the Federal Government. (Items 1 to 5)

Hog Premiums.—The quality premiums are incorporated in the price reported by farmers. (Item 7)

Vegetables.—Subsidies or bonuses paid on canning crops are included in the prices used in preparing the cash income estimates. (Item 17)

Fruits.—Subsidies or bonuses paid through canneries or processors are included in the prices used in preparing the cash income estimates. (Item 18)

Wool.—The bonus on wool quality is included in the farm price reported. (Item 19)

STATEMENT OF RECONCILIATION: CASH FARM INCOME AND SUBSIDY PAYMENTS, 1944

(Millions Dollars)

Cash income from sale of farm products (excluding direct subsidies)	$1,689·6
Subsidies paid direct to farmers	62·1
Total cash income including direct subsidies[1]	$1,751·7
Supplementary income[2]	18·4
Wheat Participation Certificates	47·3
Total cash income from farming operations[3]	$1,817·4

In its annual report for the year ended March 31, 1944, the Canadian Farm Loan Board noted that there has been a large decrease in the number of applications for loans during the last three years. The main factors affecting the decrease in new business offered to the Board during these years were: Firstly, the increased ability of farmers to finance their outstanding short term obligations from current farm revenues has reduced the volume of mortgage credit required for the refinancing of short term accounts: Secondly, increased building costs and difficulties of obtaining building material have served to limit building improvements and new construction and the consequent need for mortgage credit to finance such improvements: Thirdly, the present comparatively low interest yield from Government bonds has made farm mortgages yielding five per cent an attractive investment for private funds and consequently considerable local money, which formerly was invested in Government bonds, is now being loaned on farm mortgages. Moreover, due to lack of adequate publicity many farmers are unaware of the fact that mortgage credit can be obtained through the facilities of the Board.

From the beginning of operations in 1929 down to March 31, 1944, the Board disbursed first mortgage loans amounting to a total of $45,987,085 as well as an amount of $4,500,205 by way of second mortgage loans or a total of $50,487,290.

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[1] As published by Dominion Bureau of Statistics.

[2] Includes P.F.A.A., P.F.I.A., and W.A.R.A. (Items 14-15-16)

[3] In addition the Dominion Government paid out approximately $24 million under feed, fertilizer and lime assistance programs. (Items 6-8-9-10-11-12-13)

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THE ECONOMIC SITUATION

The wholesale price index reached a high point in April of 103·4, but over the first five months of the current year, it averaged 103·1 compared with 102·7 in the comparable period of 1944. The index of prices of Canadian farm products also reached a peak in April of this year when it was 105·3. In May this index receded to 104·6; increases in potatoes, onions, rye, live stock and fowl being offset by decreases in hay, fluid milk and eggs. The change in fluid milk prices was due to a seasonal change in the subsidy from 55 cents to 35 cents per hundredweight. The June indexes have been added since this was written. The field products index advanced from 94·0 in April to 94·8 in May.

The physical volume of business reflected a further decline in business operations. The index being 218·6 as against 232·2 in April. Curtailments in war production were chiefly responsible and new "construction business" failed to meet expectations. A slight decrease in employment was also recorded.

Livestock.—Slaughterings of hogs at inspected plants have declined sharply during the current year, up to July 7 they were 35·5 per cent less than during the same period in 1944. The decrease was larger in Western Canada than in the East—38·4 per cent compared with 29·4 per cent. Slaughterings of beef cattle were 27·2 per cent higher than a year earlier, the largest increase originating in Western Canada. Exports of beef were equivalent to about 45,000 head more than were exported in this period in 1944.

Marketings of lambs at inspected plants to July 7 were 16 per cent lower than in the first 25 weeks of the previous year.

Meat Rationing.—Increased requirements for meat in Britain and liberated countries, accompanied by decreased marketings of hogs in Canada and United States have made meat rationing imperative. Therefore the rationing of meat is to be resumed in Canada as soon as the facilities required can be set up. The control of livestock slaughterings has already been instituted by imposing a requirement that slaughter permits must be obtained. The ration will apply to all meats except poultry, thus covering a larger volume of meat products and providing more complete control of distribution than was previously the case and a balance between export and domestic needs.

Crop Conditions.—Crops are spotty. The spring wheat crop in the Prairie Provinces will be considerably below that of last year. Prospects for coarse grains are somewhat better. The outlook in Manitoba is better than in Saskatchewan and Alberta. In southwestern Ontario, field crop conditions have improved considerably. Hay is a good crop. Fruit crops will be light, although British Columbia is expected to have a good apple crop. Tobacco and vegetable crops are late but with favourable weather may be reasonably satisfactory. In Quebec and the Maritimes, hay is a heavy crop but unfavourable weather has affected the grain crop. Potatoes are making progress after a bad start.

Cost of Commodities and Sources Used by Farmers.—The index of the farm cost of living advanced 1·8 points between January and April of this year. The eight factor index covering materials was very little higher. However, the eleven factor index including tax, interest and wage rates rose sharply from the January index of 137·4 to 142·0 in April.

ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Living Costs and Production Indexes Computed by Dominion Bureau of Statistics.

Year	Wholesale Prices 1926=100				Cost of Living 1935-39=100		Commodities and Services used by Farmers, 1935-39=100		Production
	All commodities (1)	Farm products (2)	Field products (3)	Animal products (4)	Urban Living Costs (5)	Farm Living Costs (6)	Eight Factors (7)	Eleven Factors (8)	Physical volume of business (9)
1913....	64·0	64·1	56·4	77·0	79·7	79·6	....	....	....
1914....	65·5	70·2	65·4	78·3	80·0	82·0	....	....	....
1915....	70·4	77·9	76·9	79·5	81·6	86·3	....	....	....
1916....	84·3	89·8	88·8	91·4	88·3	93·6	....	....	....
1917....	114·3	128·5	134·5	118·4	104·5	111·6	....	....	....
1918....	127·4	132·6	132·0	133·6	118·3	131·4	....	....	....
1919....	134·0	146·7	142·6	153·5	130·0	143·0	....	....	62·3
1920....	155·9	160·6	166·5	150·8	150·5	170·7	....	....	65·9
1921....	110·0	103·7	100·3	109·5	132·5	139·5	....	....	58·1
1922....	97·3	88·0	81·4	99·0	121·3	127·5	126·9	133·2	69·1
1923....	98·0	81·5	73·3	95·1	121·7	127·9	118·7	128·7	74·7
1924....	99·4	88·1	82·7	97·2	119·5	125·1	122·5	132·6	73·9
1925....	102·6	101·0	98·2	105·6	120·6	123·6	124·3	131·8	79·4
1926....	100·0	100·0	100·0	100·0	121·8	120·9	120·6	129·3	87·3
1927....	97·7	102·1	99·9	105·7	119·9	119·5	120·9	130·1	92·7
1928....	96·4	100·7	92·6	114·3	120·5	118·3	119·4	128·2	102·4
1929....	95·6	100·8	93·8	112·5	121·7	117·4	118·4	127·5	109·6
1930....	86·6	82·3	70·0	102·9	120·8	113·7	105·7	116·3	95·6
1931....	72·1	56·3	43·6	77·6	109·1	103·7	91·8	100·8	81·7
1932....	66·7	48·4	41·1	60·7	99·0	97·7	88·7	93·4	68·7
1933....	67·1	51·0	54·8	59·7	94·4	95·7	88·4	90·0	69·6
1934....	71·6	59·0	53·8	67·7	95·7	97·8	96·8	96·0	82·2
1935....	72·1	63·5	57·3	74·0	96·2	97·9	95·6	96·0	89·4
1936....	74·6	69·4	65·8	75·3	98·1	98·3	98·4	98·0	98·0
1937....	84·6	87·1	88·3	85·0	101·2	102·9	108·5	105·4	107·2
1938....	78·6	73·6	69·0	81·3	102·2	102·0	101·1	101·5	98·6
1939....	75·4	64·3	54·2	81·2	101·5	99·5	96·1	99·1	106·9
1940....	82·9	67·1	55·9	85·2	105·6	108·6	102·3	105·7	124·3
1941....	89·9	71·2	56·5	95·8	111·8	114·2	108·2	114·1	165·0
1942....	95·6	82·5	66·5	109·2	116·8	119·2	119·7	128·0	202·2
1943....	99·9	95·9	81·6	119·9	118·4	121·7	122·4	136·0	235·9
1944....	102·5	102·9	91·8	121·3	118·9	122·8	125·7	138·8	236·3
1944									
April...	102·9	104·0	92·4	123·4	119·1	123·0	125·8	139·5	239·5
May....	102·5	101·8	91·2	119·6	119·2	....	....	....	236·0
June....	102·5	102·0	91·1	120·2	119·0	....	....	....	238·8
July....	102·5	102·0	91·8	119·0	119·0	....	....	....	232·2
Aug....	102·3	101·2	91·2	117·9	118·9	122·6	125·8	141·3	233·1
Sept....	102·3	101·0	91·0	117·8	118·8	....	....	....	231·0
Oct.....	102·4	103·0	91·6	122·0	118·6	....	....	....	228·0
Nov....	102·4	103·1	91·5	122·5	118·9	....	....	....	227·9
Dec.....	102·5	103·3	92·2	122·0	118·5	....	....	....	233·0
1945									
Jan.....	102·8	104·4	93·5	122·7	119·0	122·8	125·3	137·4	228·8
Feb....	102·9	104·6	93·8	122·7	118·6	....	....	....	216·7
Mar....	103·0	105·1	94·0	123·6	118·7	....	....	....	225·2
April...	103·4	105·3	94·0	124·2	118·7	....	....	....	232·2
May....	103·0	104·6	94·8	121·1	119·0	125·5	120·5	142·0	218·6
June....	103·2	105·7	95·8	122·4	119·6	....	....	....	219·5

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1. See Prices and Price Indexes 1913-1928, pp. 19-21, 270-289 and 1913-1939, p. 17.
2. Wholesale prices of Canadian products of farm origin only. See Prices and Price Indexes 1913-1937 p. 52, and Monthly Mimeographs 1943-44.
3. Wholesale prices of grain, fruits and vegetables.
4. Wholesale prices of animals and animal products.
5. See An Official Cost of Living Index for Canada, 1940.
6. Price Index Numbers of Commodities and Services used by Farmers (Revised Mimeograph).
7. Ibid 6. Includes prices of commodities in eight groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.
8. Ibid 6. Includes the eight commodities indicated above plus tax, interest and farm wage rates.
9. Monthly Review of Business Statistics, p. 8 and Monthly Indexes of the Physical Volume of Business in Canada, supplement to the Monthly Review of Business Statistics November, 1932. Yearly index numbers for 1943, subject to revision.

THE AGRICULTURAL FOOD BOARD

A. E. RICHARDS

The Order in Council establishing an Agricultural Food Board was passed on the first day of March, 1943. By this order, and under the agreement between the Minister of Agriculture and the Minister of Finance, the Department of Agriculture assumed additional responsibilities relative to the supply and distribution of food products. Briefly, the duties and responsibilities of the Board are: in co-operation with the Agricultural Supplies Board, to develop and direct the policies of the Department of Agriculture for the wartime production of food; to co-ordinate the activities of all commodity boards established under the Department of Agriculture; to direct the diversion of food products produced in Canada to fill export contracts, to meet the requirements of the armed forces in Canada and to supply deficient areas in Canada; and to provide a medium for co-operation between the Department of Agriculture and the Wartime Prices and Trade Board in all matters pertaining to agricultural production, price adjustments and subsidies.

The Board is composed of six officers of the Department of Agriculture. A Secretary, an Associate Secretary, a special assistant on audit and accounting and two commodity assistants make up the Secretariat whose duty it is to interpret Board policy. The Secretariat is responsible to the Board for the administration of the payment of subsidies. The whole program has been carried out without adding to the pre-war executive staff of the Department of Agriculture.

Producers' subsidies are direct payments to farmers in addition to their return under ceiling prices and are necessary with our price controlled economy to maintain or increase the production of essential food products. Subsidies are paid to primary producers by the manufacturers or distributors who are the first receivers of the raw product. When the processor furnishes proof to the Agricultural Food Board that he has paid the full subsidy to the producer he is reimbursed out of government funds. The subsidy must be paid in addition to any legal or contract price and must be shown as such on the statement with the producer. The subsidy is paid on condition that the processor has paid a price to the producer satisfactory to the Board.

The Agricultural Food Board is ready to receive representations from the Agricultural Advisory Committee to the Minister or other producer representatives regarding the Agricultural Food Board program at any time. Before the subsidies for the ensuing year are announced the Board invites producer representatives to Ottawa to discuss the subsidy program and submit their recommendations.

Milk and Milk Products.—Subsidies are used as a means of directing supplies into desired lines of dairy production. Under the wartime price and subsidy program total milk production has increased from 15·8 billion pounds in 1939 to 17·6 billion pounds in 1944, an increase of 11·6 per cent. This increase in production has provided Canadian people with an unrestricted supply of fluid milk (net increase of 17 per cent over 1939), more butter than before the war and at the same time large quantities of cheese and concentrated milk products have been exported to meet overseas requirements of the United Nations.

Fluid Milk.—The main purpose of the subsidy is to encourage the producers of milk to meet increased demands from army camps and from cities and towns throughout Canada where war industry has resulted in increased population and greater purchasing power among former low income and under-nourished sections of the population.

The fluid milk subsidy is paid on a selective basis. Application is made by producer groups in a market centre to the Provincial Milk Control Boards or Commissions who act as agents for the Agricultural Food Board. The

Provincial Boards who know local conditions review the situation, consider the need and amount of the subsidy that should be requested, review the application and forward it to the Agricultural Food Board with their recommendation. The Agricultural Food Board may accept the recommendation of the provincial authority or may change it. In place of a subsidy, particularly the maximum subsidy, the Board may recommend a price increase where the prevailing retail price is unusually low, in which case the application is referred to the Wartime Prices and Trade Board, or the returns to producers may be increased by a combination of the lower subsidy rate and a price increase.

Subsidies are applied to milk purchased for fluid distribution in specific market centres. The Board does not issue blanket authorization for payment on a regional basis. In dealing with the need and amount of a subsidy for a specific distributing centre the Board is guided by certain principles. In applying these guiding principles the Board endeavours to maintain the price relationship between markets which existed during the base period. In certain local situations where unusual demand has arisen, exceptions have been made.

Manufactured Dairy Products.—A subsidy is paid on the whole milk delivered by the producer or on the butterfat contained in the milk. A double subsidy is not paid. That is, butterfat removed from milk is not eligible for subsidy if the whole milk has already been subsidized. With this exception the butterfat subsidy is paid on all butterfat used in the manufacture of creamery butter; the cheese milk subsidy is paid on all milk used in the manufacture of cheddar cheese; the concentrated milk subsidy is paid on all milk used in the manufacture of concentrated whole milk products which include whole milk powder and evaporated whole milk; the concentrated milk subsidy is paid on skim milk powder and evaporated skim milk provided the butterfat subsidy has not been claimed on the same milk; a subsidy equivalent to the concentrated milk subsidy is paid on milk used in the manufacture of milk sugar (lactose). The subsidies are paid on proof of manufacture of these products anywhere in Canada.

Control of Diversion.—In order to prevent the diversion of milk from priority uses into less essential outlets, the utilization of milk within the dairy industry has been stabilized by requiring distributors or manufacturers to obtain permission from the Agricultural Food Board before purchasing milk or cream from other than those from whom they were purchasing milk or cream prior to and regularly since September 30, 1943. This Order came into effect October 1, 1943, and although at the start it met with considerable opposition from the trade, it is now favourably regarded. The trade has acknowledged the effectiveness of the Order in holding producers at cheese factories and creameries and thereby maintaining or increasing the production of cheese and butter. A milk producer cannot shift his production to another usage except under permit from the Agricultural Food Board. Shifts from one distributor to another are also controlled. This has practically eliminated competition among dairies for producers in the same market. The Office of the Administrator of Services has co-operated fully with the Board in controlling diversion and will not issue a trucker's permit to haul a farmer's milk supply over a new route unless clearance is first secured from the Agricultural Food Board. In many market centres the Medical Officer of Health will not inspect dairy farm premises unless the distributor holds a Food Board permit to purchase milk from the additional producer.

The Agricultural Food Board enforces control by denial of subsidy in the case of unauthorized diversion. In the early months denials of the subsidy were frequent. Now, with a better understanding of the purpose of the Order and the Board's method of control, denials are relatively infrequent.

Under the Order producers are held to their outlets unless special circumstances exist which the Board recognizes as justification for change. The seasonal closing of cheese factories and creameries not equipped for winter manufacture accounts for a considerable number of the diversions under permit.

Recovery of Subsidies on Exports and Butter used for Industrial Purposes.—By Order in Council P.C. 5424, July 14, 1944, the Agricultural Food Board was authorized to impose and collect a refund at a rate commensurate with the subsidy paid on butterfat or milk used in the manufacture of creamery butter, cheddar cheese and concentrated whole milk products when sold for ships' stores or for export, except when exported under government contract, and, with respect to butter only, when used for industrial purposes in Canada. The Export Permit Branch, Department of Trade and Commerce, and the Commodity Prices Stabilization Corporation Limited, Wartime Prices and Trade Board, have been named as agents of the Food Board to collect subsidy refunds.

Milk Subsidies, 1945.—The Dominion Government will continue to pay the same subsidies on milk and milk products during the twelve months beginning May 1st, 1945, as in the period May 1st, 1944, to April 30th, 1945. The subsidy of 10 cents per pound of butterfat used in the manufacture of creamery butter and of 20 cents per 100 pounds on milk for cheese manufacture will be paid throughout the year. In authorized areas a subsidy of 35 cents per 100 pounds on fluid milk will be paid to producers from May 1, 1945, to September 30, 1945, and 55 cents per 100 pounds from October 1, 1945, to April 30, 1946, except in certain areas where it will continue at 25 cents. For milk used in the manufacture of concentrated milk products and of milk sugar, subsidy will be paid at the rate of 15 cents per 100 pounds from May 1, 1945, to September 30, 1945. This will be raised to the winter level of 30 cents per 100 pounds at October 1, 1945. The total subsidies paid to producers of milk and butterfat in 1944 amounted to approximately 44 million dollars.

Canning Crops.—Subsidies are paid through the processor to producers for such quantities of the named vegetables as are delivered to and purchased by canners for processing.

The price for the crop is that paid in 1941 or any higher amount agreed upon, and in addition the grower receives the subsidy on the amount of the crop delivered. Subsidies are paid out by canners on behalf of the Board and reimbursement to canners is made upon submission of claims after settlement in full has been made with the growers. The growers' subsidies apply on tomatoes, corn, peas and beans at the following rates per ton: tomatoes $6.00; corn $4.00; peas $10.00 shelled weight, or $2.00 straw weight; and wax and green beans $7.50. Total subsidies paid on canning crops in 1944 amounted to approximately 2½ million dollars.

Berries for Jam and Canning.—Subsidies for berries are included by the manufacturers in their purchase prices. Their purpose is to maintain the production of berries for jam manufacture and canning and to allow manufacturers some assistance in competing for fresh fruit without increasing the ceiling prices on jams and canned berries.

Subsidies are payable and recoverable only by jam manufacturers holding a Manufacturer's Sales Tax License issued by the Excise Division of the Department of National Revenue and producing jam or canned fruit for sale on a commercial basis and through normal commercial channels. Subsidies are recoverable by manufacturers who have paid the subsidy to growers in addition to a fixed minimum price stated in the Order.

In order to halt the drastic decline in strawberry acreage when the Japanese growers were removed, subsidies were paid under the Wartime Prices and Trade Board to processors of strawberries in British Columbia, at the rate of two cents per pound when a total of eight cents or more had been paid to growers. Subsidy payments came under the Agricultural Food Board in 1943 and were extended to growers in Eastern Canada. To make the limited supply of fruit go further subsidies were paid only on berries used in the manufacture of pectin and compound jams. The continuing and unusual difficulties of the industry were recognized in British Columbia where strawberries were given three cents per pound higher subsidy than in Eastern Canada.

In 1944 raspberries purchased for canning were made eligible for subsidy and restrictions on the proportions of "pure", "pectin", and "compound" jams were removed. Although pectin and compound jam stretches the available fruit into a larger pack, they require more sugar which is also in limited supply.

Before the 1944 berry season opened, the Wartime Prices and Trade Board placed a ceiling on fresh strawberries and raspberries. This assisted jam manufacturers in competing with the fresh fruit market for supplies.

As in 1943 and 1944, this year's subsidies will continue at 3 cents per pound for raspberries, loganberries, boysenberries, gooseberries and currants. Also unchanged are the subsidies on strawberries of 3 cents per pound in Eastern Canada and of 6 cents per pound in British Columbia. These subsidies will be added to the price paid by jam manufacturers buying these fruits for processing into jam. They also cover raspberries bought for commercial canning. The total amount of subsidies paid on berries for jam and canning in 1944 amounted to approximately $400,000.

White and Yellow Eye Dried Beans.—In order to stimulate the production of dried beans for domestic needs under ceiling prices and for export requirements, a subsidy of 50 cents per bushel was paid by authority of the Wartime Prices and Trade Board above the established price to growers of $2.00 per bushel for "No. 1 pick" grade in 1943 and 1944. Beans exported were sold at $3.00 per bushel by the Special Products Board who issued participation certificates to growers as a means of distributing the additional returns. It is expected that participation certificates may increase the return to an average of $2.75 per bushel. It seemed desirable to turn the expected amount of 25 cents realized from participation certificates into a subsidy which added to the 1943 rate gives a total subsidy of 75 cents per bushel. Following an exchange of views with the Foods Administration of the Wartime Prices and Trade Board and inasmuch as the subsidy is really a grower's subsidy, it was agreed that it should be provided under the auspices of the Agricultural Food Board.

Accordingly, P.C. 12/1731, March 14th, 1945, authorized a subsidy of 75 cents per bushel to be paid, as the Agricultural Food Board may direct, to growers in the bean exporting area of Canada on their sales of 1945 crop of white and yellow eye beans.

Audit.—Claims for refund of subsidy paid to primary producers are transmitted to Ottawa through various channels and are certified by authorized provincial or federal officers, for example, fluid milk subsidies are approved by provincial milk control boards, butterfat subsidies by provincial dairy commissioners and vegetable and berry subsidies by inspectors of the Marketing Service, Dominion Department of Agriculture.

When received by the Chief Treasury Office, Ottawa, each claim is examined to detect overlapping and duplicate claims and unauthorized diversions and to see that in all respects the payment claimed is in conformity with the regulations. Arithmetical accuracy is also verified.

In addition to these examinations, field audits are made by treasury office auditors working out of Ottawa and district offices and, in some instances, by officers of the Agricultural Food Board.

RESULTS OF MARKETING STUDIES SHOULD BE USEFUL IN POST-WAR YEARS

W. C. Hopper

Producers are interested in obtaining as large a portion as possible of the dollars which consumers pay for the products they have to sell. Consumers are interested in obtaining commodities of the kinds and qualities and in the amounts which will best meet their requirements, and also to get as much as possible of these commodities for the dollars they have to spend.

In simple terms the portion of the consumer's dollar which the producer receives is the amount paid by the consumer less the cost of marketing.

In general the marketing research of the Economics Division has been, and is directed towards providing information which will point the way to a reduction in marketing costs largely by improved marketing methods and facilities so that producers may obtain a fair share of the consumer's dollar, and by indicating to producers how to meet consumers' requirements most satisfactorily at home and abroad.

Wholesale Markets.—Fresh fruits and vegetables now constitute a most important part of the diets of Canadian families. There has been a rapidly growing awareness on the part of consumers of the nutritional value of these commodities. They are classed among the "protective foods". Improvements in farm to market roads and in rail and truck transportation methods has made it possible to bring to urban centres home-grown and imported foodstuffs of this kind in greatly increased quantities. But improvement and enlargement of facilities in our cities to efficiently handle this great increase in volume have not taken place and consequently city marketing of these products is much less efficient and, therefore, much more costly than it should be. Recognizing this situation, studies were undertaken in a number of Canadian cities by the Economics Division in co-operation with Provincial Governments, of the existing methods and facilities in handling these farm commodities from the producer and distributor to the consumers. The cities included in these studies were Toronto, Ottawa, Montreal, Quebec, Sherbrooke and Three Rivers.[1] These projects were conducted during the years 1935 to 1938 inclusive.

The importance of the trade in fresh fruits and vegetables is indicated by the volume received and handled in the cities of Toronto and Montreal. About 250,000 tons having a laid down value of about 13 million dollars arrived in Toronto in 1935. About 400,000 tons having a laid down value of about 17 million dollars arrived in Montreal in 1937. Estimates for more recent years indicate that the annual value of fresh fruits and vegetables received in these cities has been increased by several millions of dollars.

The reports recorded the origin of all produce, of methods and routes by which it was brought to the city, the sales on public markets through retail and wholesale outlets classified by groups such as potatoes, vegetables and fruits, and many other data.

The study showed further that an appreciable part of the fruits and vegetables arriving in Toronto and Montreal was shipped out again for consumption in smaller centres of population. Costs amounting to hundreds of thousands of dollars annually were being unnecessarily incurred in the city distribution of these commodities and recommendations were made for the erection of modern wholesale food terminals in each city.

It has been estimated that the erection of a modern food terminal in Montreal would save growers and independent retail stores in time alone from three hundred to four hundred thousand dollars annually. This does not take into consideration the savings to other buyers and sellers who might use the market. It has been estimated also that a new wholesale market in Toronto would result in savings of a somewhat similar character.

During the period of the European war no action was taken in either Toronto or Montreal to implement the recommendations for new wholesale terminals, but in 1944 committees were created to recommend sites and facilities for these new terminals. These committees have made considerable progress and tentative sites have been selected. The data gathered and made available in reports of the Economics Division have been extensively used by the committees in their deliberations and plans.

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[1] W. F. Chown and W. C. Hopper: Wholesale Marketing of Fresh Fruits and Vegetables in the City of Toronto. 1940.

E. P. Reid, B. A. Campbell and W. C. Hopper: The Marketing of Perishable Farm Products in Ottawa. 1940.

B. A. Campbell, A. Gosselin, P. E. Doyle and N. Delorme: The Marketing of Fresh Fruits and Vegetables in the City of Montreal. 1940.

B. A. Campbell, L. Fortin, P. E. Doyle and N. Delorme: The Marketing of Fresh Fruits and Vegetables in Quebec City. 1942.

——————: The Marketing of Fresh Fruits and Vegetables in the Cities of Sherbrooke and Three Rivers. (Dominion Department of Agriculture in co-operation with the Quebec Departments of Agriculture and Trade and Commerce.) 1941.

Prices and Returns for Nova Scotia Apples.—Prior to the war about 85 to 90 per cent of the Nova Scotia apple crop which was sold as fresh fruit was exported. About 90 per cent of these exports went to the United Kingdom. During the war this market for fresh apples was almost completely cut off, but it is hoped that when shipping conditions improve the British market will again be able to take Nova Scotia apples in pre-war volume. At the request of the Nova Scotia Department of Agriculture the Economics Division undertook a survey of the marketing of the Nova Scotia apple crop. This was to deal with the movement of apples from the orchard to the market in the United Kingdom. The survey covered the period 1931 to 1937. Consideration was to be given to pack-out and grades in relation to returns through specific fruit companies with particular attention to cold storage warehouses.

The price returned to the producer is the final test of the efficiency of any marketing service. The report[2] of this investigation shows the prices received by apple producers from the sale of their apples over a seven-year period, the reasons for variations in the returns, the factors affecting returns such as quality and size of apples, and the market preferences in the United Kingdom. The results of the study also show the costs involved in storing, packing, selling and transporting the fruit to the United Kingdom market.

These data, in conjunction with studies of costs of producing Nova Scotia apples, have been of great value during the period of the European war in determining the financial assistance which should be rendered by the Dominion Government to the Nova Scotia apple industry as a result of war conditions and the loss of the British market for fresh apples. The results of the study will, in the future, continue to provide knowledge to producers and to companies packing and shipping apples as a guide to them in their marketing operations.

Marketing Live Stock.—Canadian live stock to be slaughtered by packing plants is marketed through stockyards or direct to packing houses. The producer is interested in knowing which method is likely to give him the largest returns. In 1938 a study of these two methods of marketing cattle and hogs was made in Toronto and Winnipeg.[3] Information was obtained for a large number of each class of animals. In the summary of the report it is stated that during the period covered by the survey the prices paid for live stock purchased under the alternative methods for which comparisons were made varied considerably both within and between markets. It cannot be said that packers consistently paid more for live stock purchased on one basis than on the other. It would appear, however, that if marketing costs are deducted from sales made through stockyards in an effort to determine the net returns to farmers, the result in the case of hogs favoured direct selling. In the case of cattle the advantages were less conclusive but on the side of direct selling.

Marketing Grain Corn.—One of the important cash and feed crops of Ontario is grain corn. The region devoted to this crop has been largely confined to about five counties in Southwestern Ontario. With the development of hybrid seed it is now possible to produce mature corn in areas which have a shorter growing season. Therefore, in the years following the war this crop is likely to be more important in the economy of Ontario than in the past. Many producers have been interested in improving the methods of marketing this crop but believed that much more knowledge of existing marketing practices was necessary before plans could be developed for greater efficiency in the distribution and sale of grain corn not only during the war but in post-war years. With the active co-operation of the Ontario Department of Agriculture the Economics Division undertook a comprehensive survey of the marketing of grain corn in Southwestern Ontario in 1940. Data were obtained from 350 representative corn growers and 62 representative corn buyers on the many aspects of storage and marketing of this crop. In the report[4] of the survey there is an analysis of the handling and distribution of grain corn from the time it is harvested on the farm until it reaches the consumers in the corn area or the buyers outside the area.

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[2] A. E. Richards: Prices and Returns for Nova Scotia Apples. 1940.

[3] W. F. Chown, S. C. Hudson and J. N. Lewis: The Direct Marketing of Live Stock. 1941.

The report showed that about fifty per cent of the Ontario corn was fed on the farms where it was grown. Of the remaining fifty per cent more than half was used for feed either as whole corn or manufactured feed. The report also showed that the largest percentage of the crop which is sold is handled by local elevators and that more than fifty per cent of the sales, and therefore more than seventy-five per cent of the Ontario production, was used west of Toronto in Ontario during the year 1940.

The results of the study pointed to the need to furnish producers regularly with more information on corn prices and other marketing facts. Dissemination of this type of information has been increased since the study was made.

During the period of the study, information was gathered from growers and dealers with respect to their attitude towards grading of corn and the results indicated that both these groups favoured changes in the grading regulations. These changes have been brought into effect by the Board of Grain Commissioners.

The contributions of this study towards the improvement in the marketing of Ontario grain corn should continue to be of value in the post-war period.

Agricultural Co-operation.—Since 1932 the Economics Division has been requesting co-operative associations to complete an annual record of their activities. These statistics are compiled and an annual summary[5] is published showing a total of their balance sheets, and a record of total business by provinces and by commodities. A directory of co-operatives was compiled in 1936 and recently another list has been prepared and is to be issued very shortly.

Costs of Wholesaling Fruits and Vegetables.—Sales of Canadian fruit and vegetable wholesalers approaches 100 million dollars annually. Any reduction in the costs of marketing these commodities, which are now considered essential in the diets of all Canadians, should help to make them available in larger quantities to a greater number of Canadian families and particularly to those families on low incomes.

Realizing that reductions in distribution costs are desirable but lacking adequate information on existing costs the Canadian Fruit and Vegetable Jobbers' Association in 1936 requested the Economics Division to make a study. In order that the study might be Dominion-wide in scope, 87 firms carrying on business as wholesale fruit and vegetable dealers in various cities across Canada were invited to co-operate with the Division and furnish financial and other data with respect to their marketing operations. The report of this study constitutes a body of information which will be useful for many purposes in post-war years.[6]

For the years that this study was made, namely 1935 and 1936, there was considerable variation in the cost of wholesale distribution of fresh fruits and vegetables among different firms and on different markets. The average cost of the 87 firms was $105.76 per $1,000.00 of sales, and market averages varied from $81.97 in Toronto to $172.03 in Saint John. Distribution cost did not vary definitely in relation to sales volume, but was affected in a general way by the different methods used to attain sales volume. For example, the expense for salesmen's salaries was less in Montreal and Toronto where the buyers came to the warehouse, than in British Columbia and the Prairie Provinces, where salesmen usually called on the buyers. The cost of delivery varied considerably from $6.81 per $1,000.00 of sales in Toronto to $31.89 in Sydney, and it would seem possible for this expense to be curtailed. The use of a single delivery service by wholesalers for that part of the merchandise not taken by customers in their own conveyance offers possibilities of economy. The purchase co-operatively of carloads of produce and adoption of credit associations should also assist in reducing costs. In order that dealers may co-operate for their common benefit, it is essential that they be located near one another. In view of this fact, the report states that a terminal market affords the greatest opportunity for such co-operation, not only for their own benefit but to ensure efficient service to the growers and consumers.

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[4] A. H. Turner: The Marketing of Grain Corn in Southwestern Ontario. 1943.

[5] A. E. Richards and L. Lalonde: Co-operation in Canada. 1942.

[6] W. F. Chown and A. H. Turner: Costs of Distribution in the Wholesale Fruit and Vegetable Trade. 1940.

The marketing research projects mentioned above are examples of some of the work done by the Economics Division in this field. Other articles appearing in this or future issues of the Annalist will deal with other phases of marketing and consumption of agricultural products.

The first marketing study of the Economics Division was made only about 15 years ago. Marketing is one of the newest fields of research and every piece of data gathered is a contribution to knowledge. The research which has been done since this Division was established has been largely in response to specific requests of producers or distributors of agricultural products or by Provincial Governments. In almost every instance the provincial government in the province where the work was done has co-operated in the field work as well as in the tabulation and analysis of the data. While the research was undertaken for a special purpose, in every case the results have had a much wider use and should continue to be of value in post-war years.

AGRICULTURAL MARKETING SURVEYS AS AIDS IN PLANNING

E. P. Reid

Official planning for reconstruction has been going on at various levels since the early years of the war. There have been international, national, provincial, and local committees forecasting and prescribing for the post-war problems of the economy in general and agriculture in particular. The work has been accompanied by reasearch and by indications of fields where further research is required.

A number of surveys have been made by the Economics Division of the volume and sources of farm products supplied to certain urban areas in Eastern Canada. There were different occasions for and objectives in these studies, but a common theme has been to examine the effect of demand in mining centres on local farming and on farming generally. The studies made since the beginning of the war have been intended to provide information for planning post-war marketing and settlement. In 1938 a survey was carried out in the coal-mining area of Cape Breton Island.[1] In 1941 the Porcupine and Kirkland Lake gold camps were surveyed from this point of view.[2] In 1942 a similar project was carried out in the neighbouring gold-mining area of Northwestern Quebec.[3] A study of a smaller centre was that carried out during 1944 in Smiths Falls, a railway and manufacturing town in Eastern Ontario.[4]

From the point of view of the relative contribution of local farm production to the total demand of these areas the following table is significant.

The Sydney area was largest, 90,000 people at the time of the survey. Of more than 5 million dollars of receipts of produce tabulated, local Cape Breton Island farms supplied a little more than one-fifth. In Northern Ontario and Quebec, each somewhat less populous, the corresponding proportions were 18 per

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[1] E. P. Reid and W. C. Hopper: The Market for Farm Products in the Sydney Area of Nova Scotia. 1941.

[2] W. R. Peters and E. P. Reid: The Market for Farm Products in Urban Centres in Northern Ontario. 1945.

[3] E. P. Reid and Henri Dubord: The Market for Farm Products in Northwestern Quebec. To be published 1945.

[4] P. J. Thair: The Market for Farm Products in the Eastern Ontario Town of Smiths Falls. To be published 1945.

TABLE 1.—ANNUAL REQUIREMENTS OF FARM PRODUCTS AND LOCALLY PRODUCED SUPPLIES AT FOUR MARKETS

—	Year of Study and Population		Total Value	Value of local supply	Local supply as proportion of total
			$	$	Per cent
Sydney	1937	90,000	5,343,665	1,053,341	21
Northern Ontario	1940–41	71,000	6,376,989	1,174,548	18
Northwestern Quebec	1941–42	50,000	4,819,895	784,209	16
Smiths Falls	1943–44	7,200	880,392	474,440	54

cent and 16 per cent respectively on somewhat larger per capita totals. These areas were all basic mining economies, although fertile arable land was locally available and being farmed. Smiths Falls, in an area of dairy farming, obtained over half its ascertained needs for farm products locally.

Nature of Local Supply.—To some extent there was specialization in local farm production so that much higher proportions of certain food supplies were produced locally than the general averages suggest. Table 2 bears this out:—

TABLE 2.—LOCAL SUPPLY AS PROPORTION OF MARKET REQUIREMENTS OF FARM PRODUCTS, BY COMMODITY GROUPS AT FOUR MARKETS—TONNAGE BASIS

Study	Year	Fluid Milk	Butter	Potatoes	Vegetables	Meats	Cheese	Processed Milk
		Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Sydney	1937	97	2	34	71	4	Nil	Nil
Northern Ontario	1940–41	100	15	5	9	10	5	Nil
Northwestern Quebec	1941–42	81	27	25	9	12	*	Nil
Smiths Falls	1943–44	100	85	37	31	47	82	Nil

Fluid milk, a bulky product, was mostly produced locally for each area, the only exceptions being at Sydney and in the Quebec mining region. The former used small supplies from the mainland of Nova Scotia, and a regular supply went to Northern Quebec from the adjacent part of Northern Ontario. Butter production was not important in Cape Breton and Northern Ontario, but in northern Quebec a surplus manufacture during the year was not available at all seasons when needed, through lack of cold storage facilities. Potatoes, vegetables and meats were all produced locally in varying quantities less than 50 per cent in each case.

The situation of producing adequate quantities of some products such as meats and dairy products but failing by reason of limited processing facilities to market them locally or to make unnecessary the shipment of such produce from a distance was characteristic of the northern areas. These markets are situated adjacent to the Clay Belt of fertile farming land, which extends through both Ontario and Quebec. The production of live stock, butter, and cheese was largely unco-ordinated with local demand. It was ascertained that in 1941-42, some 2 million pounds of butter were consumed in the survey centres of northwestern Quebec, of which only 27 per cent was locally produced. Nevertheless production in the same period in the two local counties was 2,800,000 pounds[5]. The movement of live stock, all in co-operative shipments, to Montreal in the fall of 1941 was over 3,000 head worth $51,000 f.o.b. Supplies of meat received in a return movement from the same district cost $31,000, but local sales of local meat were $157,000, 11 per cent of meat receipts. There was similar over- and under-production around Smiths Falls, which was, however, quite near larger central markets. There was little or no inward and outward shipment of the same product at Sydney, where local production, on land less than excellent, was mainly geared to demand.

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[5] In the Ontario area butter consumption exceeded 3 million pounds and production in Cochrane and Timiskaming Districts was 1 million pounds, of which only half moved onto the survey markets. Thus the maladjustment of local supply and demand for this product was not so accentuated as east of the border.

What the Planners Recommend.—The Report on Northern Ontario, adopted by the Ontario Agricultural Commission of Inquiry on January 16 last, discussed the Northern Ontario settlement problem along these same lines: "The lack of density of farms is the chief reason for lack of marketing facilities and outlets found in many areas, especially the newer ones. There are . . . . large consuming urban areas, such as mining, lumber, industrial and shipping towns. Except for milk and some vegetable production, these centres might just as well be outside the area completely when it is considered that under modern methods of transportation and merchandising, to supply the daily food needs of urban centres, the opportunity to supply these needs is denied to the nearby producers, unless they have the essential storage, processing, grading and packing facilities to supply these consumers' needs that are employed by far away producers in this service. This position of affairs was entirely different in old Ontario when the land settlement was in the same stage . . . . Nowadays the producing areas of all the world are open and available to the urban consumers even of our remote Northern towns, such has been the development of transportation, processing and preservation of food in the meantime. It is obvious, therefore, that the North Country cannot be expected to progress marketwise, even in its own natural markets, in the same way as old Ontario did in a similar time . . . ."

"The first requirement for the improvement of marketing is the production of sufficient volume to support economically the facilities and services required. That necessary volume is now restricted by the lack of density of farms and farm clearings . . . ."

The Commission's recommendations pertain mainly to settlement techniques, as following logically from the above analysis of the market problem. The same approach is made by Prof. Esdras Minville in his Memorandum on Conservation and Rational Utilization of Natural Resources in the Province of Quebec[6]. He emphasizes the desirability of better co-ordination of forest and farm activities in Abitibi and Timiskaming.

If one were to accept the inferences of these recommendations, it would be necessary at once to refer to settlement studies made by the Economics Division in these same areas at slightly different periods. The reports entitled Land Use and Part-time Farming in Cape Breton County[7] and Settlement Problems in Northwestern Quebec and Northeastern Ontario[8] both examine settlers' experience and are thus direct data for consideration of planners of colonization. However, marketing problems need not be dismissed as not subject to alleviation in their own sphere. Facilities have in the past and will in the future help to co-ordinate efforts of local producers and needs of consumers. Timmins, with a small abattoir, and Kirkland Lake and Rouyn, with indoor markets encouraging sale of retail cuts of meat, each took appreciable amounts of local meat, quite unmatched at Cochrane, Iroquois Falls or Val d'Or.

Co-operation.—The Sub-committee on Agricultural Policy of the James Committee endorsed the resolution favouring co-operation passed by the United Nations conference on Food and Agriculture in 1943. The farmers of the three mining areas studied all had assayed co-operative marketing and purchase of supplies, and there appeared scope for further development. In the Sydney area a substantial proportion of milk distribution was under co-operative auspices. A producers' milk distributing co-operative had operated at Timmins previous to the survey period. Co-operative marketing and co-operative purchase of supplies were well established at New Liskeard where, however, the attainments were not closely related to the supplying of the mining town markets, although the farmer members and their neighbours individually sold much produce at Kirkland Lake. Apparently the problems of buying grain from the West and selling live stock on the Toronto market were more difficult to solve individually than those of placing vegetables and fluid milk in the neighbouring mining towns.

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[6] Prepared for the Sub-Committee on Conservation of the James Committee on Reconstruction.

[7] J. N. Lewis and S. C. Hudson. February, 1942.

[8] A. Gosselin and G. P. Boucher. February, 1944.

The Coopérative Fédérée de Québec operates in the Clay belt through a regional office at LaSarre north of Rouyn, and it has locals in the form of creameries and stores in many centres in Abitibi and Timiskaming counties. This organization facilitated obtaining large quantities of western grain to feed to cows, from which milk and cream went to the mining towns. However, as has been suggested above, the principal solution to members' marketing problems was the systematic shipment of butter and live stock to central markets, mainly Montreal. Although no direct inquiries were made, one presumes that the Fédérée is alert to the possibility of advantageously establishing cold storage facilities in the North at some stage in the development of farming and urban activity.

Generally speaking, producers in these areas stated that they saw their best hope for a better place on the local market in producing more and better quality produce of the kinds with which they were already most successful. They were already at a maximum for fluid milk except as population and consumption rates grew. Butter, meat, and vegetables were indicated as products worthy of more careful grading and increased and more regular volume for both wholesale and retail sale to townpeople.

For several years previous to and during the early years of the war, the Ontario Department of Agriculture had a marketing promoter for the Districts of Timiskaming and Cochrane. He endeavoured to guide producers in adopting more efficient methods of marketing hay, grain, potatoes, milk, vegetables and blueberries. This work helped bring about stronger co-operative societies, a town market at Timmins, collective bargaining between milk producers and distributors at Kirkland Lake and Timmins, a market for northern-grown seed potatoes in old Ontario, and more orderly and lucrative shipment of blueberries.

Similar work has been and will be carried on in Cape Breton by agricultural representatives and the co-operative movement and in Northwestern Quebec by the agronomes and the Coopérative Fédérée.

National Policies and Local Action.—The common characteristic of these markets, even should farmers' selling methods be thoroughly rationalized, is the one-industry nature of the settlements. The key to Cape Breton farm prosperity is largely in the prosperity attained by the coal-steel enterprise of the area. The northern towns are dependent on gold, with a strong interest also in copper at Noranda. Smiths Falls prospers with the Canadian Pacific Railway Company and consequently with the general business activity in Canada. These relationships suggest national policies and those of international significance. Reference could be made to Bretton-Woods, to the main report of the Committee on Reconstruction, to the Government's White Paper on Employment and Income of April, 1945, and to the forthcoming report of the Carroll Royal Commission on the Canadian coal industry. A theme common to these is full employment. Such a continuing state, not at the expense of coal or gold or transportation, would be vital in the solution of farm marketing problems in the areas here discussed. However, the type of analysis attempted in these surveys brings the problem close to the farmers concerned and to matters within their control. It is of techniques controllable by agricultural producers and by governments in local situations that this article principally treats, even though the lesser part of the overall problem may be thus encompassed.

FOOD CONSUMPTION SURVEYS

C. I. Johnston

Studies of food consumption conducted by the Economics Division have been mainly directed toward solving the problem of the farmer as a producer and seller of food. The importance of the home market, which from 1935 to 1941 took on the average approximately three-quarters of the value of agricultural production, was appreciated, and most studies were carried on in urban centres. The consumption of agricultural products by representative families was examined to determine what factors influenced the sales of those products. Inquiry was made as to income, family composition, and the occupation and national origin of the chief wage earner of the family to determine their effect upon the quantities consumed.

The studies dealt not only with quantities of food consumed but additional information was gathered for three main purposes: (*a*) to determine consumers' opinions of the desirability of a product, in what form or variety it was preferred, and the quality in which it was obtainable, in order that a food as satisfactory as possible might be developed and marketed; (*b*) to learn at what times and in what ways the food was used, what other foods might replace it, the extent of consumers' knowledge of its value and their prejudices against it, as a basis for informing consumers about the food and furthering its consumption; (*c*) to ascertain buyers' views with regard to marketing practices so that they might receive adequate consideration in the information of marketing policies. The work of the Department in improvement of the product, in consumer education and in marketing requires such information from consumers.

Until 1942 consumption studies of the Division, with the exception of one[7] and small sections of others[2], [3], dealt with non-farm families. More recently farm families have become the subject of surveys for several reasons. Not all Canadian agricultural products can be produced economically on each farm and the potential buying power of the 27 per cent of the Canadian people who live on farms is an important consideration in the marketing of farm products. In planning production for home needs and commitments abroad more complete data than have been available of the food produced and consumed on farms are required. Through the development of the science of nutrition it has become recognized that food of adequate kind and quantity, is essential to efficiency and well being, and surveys of the consumption of the food eaten by farm families have been undertaken for the purpose of assessing their dietary status.

Chief Factors Affecting Consumption.—In all the investigations in which the relation between family income and consumption of major groups of agricultural products has been examined correlation has been found. As income per family increased from less than $500 to the $3,500 to $3,999 range, consumption of fluid milk rose from 0·36 to 1·12 pints per person per day in the Sydney-Glace Bay area of Nova Scotia[1]; consumption of cheese averaged 5·9 pounds per person annually by those on relief, and increased to 8·0 pounds in families with incomes from $2,000 to $4,000 in the cities of Quebec, Oshawa and Calgary[3]; yearly consumption of meat increased from 81 to 160 pounds per person with an increase of family income from relief to $4,000 or more[5] and

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Dates refer to the year in which the information was obtained.

All studies were made in co-operation with departments of the provinces concerned or educational institutions.

[1] J. F. Booth and R. P. Longley. The Marketing of Milk in the Sydney-Glace Bay Area of Nova Scotia. 1933.

[2] W. C. Hopper and G. P. Boucher. An Economic Study of the Consumption of Milk and Cream in Certain Urban and Rural Districts of Canada. 1938.

[3] G. P. Boucher and W. C. Hopper. An Economic Study of Cheese Consumption in Certain Urban and Rural Districts of Canada. 1939.

[4] Charlotte I. Johnston and W. C. Hopper. An Economic Study of the Consumption of Milk and Cream in Vancouver. 1940.

[5] Charlotte I. Johnston and W. C. Hopper (i) Consumption of Lamb in City Households, (ii) Consumption of Beef and Veal in City Households, (iii) Consumption of Pork, Bacon, Ham, Sausages, Liver and Poultry in City Households. 1942.

consumption of eggs rose from 10 to 22 dozen per person per year as family income rose from relief to the $2,000 to $4,000 level in Saint John, Montreal and Vancouver[6].

The second outstanding factor making for differences in food consumption was found to be the number of children in the family. Cheese consumption in families of one and two adults of the Quebec, Ontario and Alberta survey[3] rose from an average of 3·7 pounds per person per year in families of seven or more children to 10·2 pounds when there were no children in the family. In Vancouver[4] the average amount of milk consumed per child increased from ·6 of a pint per day in families of four or more children to twice that amount in one-child families. From figures obtained in the 1935 and 1936 surveys[6] consumption of eggs per person per year increased from 12 dozen to 30 dozen and meat consumption rose from 68 to 133 pounds per person per year as the number of children per family declined from five or more to none. Data from the urban areas of Halifax and Sydney, and a number of towns and villages of Nova Scotia[9] showed an increase in consumption of apples from 39 pounds to 61 pounds per person per year as the number of children decreased from five or more to none. In St. Hyacinthe, Quebec[10] households of two and three adults were divided into groups according to the number of children in the household. The amount of milk used by each group was found in terms of the minimum amount recommended by nutritionists for the number of adults and children in each group. The percentage obtained of the recommended minimum rose from 61 to 124 as the number of children per household decreased from five or more to none.

Family income and number of children per family were thus found to be important factors affecting amounts consumed of agricultural products. An index combining the two is obtained by dividing the family income by the number of persons in the family, indicating the income available per person, which is a rough measure of ability to pay for food. When a classification of families by income per person was made, amounts consumed per person of milk, cheese, ice cream and meat, particularly lamb, bacon, ham and poultry were found to vary closely with income per person.

The occupation and national origin of the chief wage earner of the household were examined as influences in consumption. Among urban families apparent differences in consumption by occupational groups were almost always resolved into differences due to income, e.g., although families of unskilled labourers ate annually 7 to 12 pounds more lamb per person than did those of professional men, in Saint John, Montreal, and Vancouver[5] they apparently did so because their incomes were lower, since that section of the unskilled group having incomes per person ranging from $300 to $599 ate a little more lamb per person than did the section of the professional group whose incomes per person were within that range.

Differences in consumption by groups of various national origins were also found in general to be related to differences in income per person although some exceptions were observed, e.g., little milk was used by the Japanese regardless of income per person[4].

The fundamental relation between incomes of Canadians and their purchases of food has of course been demonstrated during the war. With national income rising to more than twice that of 1939 the pressure on food supplies is intense although civilians in 1944 obtained from 120 to 160 per cent more of the following foods than in pre-war years: dairy products, exclusive of butter, meat, eggs, tomatoes and certain other vegetables.

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[6] Charlotte I. Johnston and E. P. Reid. Consumption of Eggs in Certain Areas of Canada, 1935-36. (Unpublished.)

[7] W. C. Hopper and P. H. Casselman. Consumption of Dairy Products in Rural Canadian Homes. 1940.

[8] Charlotte I. Johnston. The Consumption of Apple Juice. The Economic Annalist. December, 1940.

The solution of the long-term problem of marketing Canadian agricultural products depends in large part upon the earning of sufficient buying power per person to enable Canadian families to purchase all they require of Canadian farm products at prices such as to provide adequate farm income. This involves work for all who seek it, at a high level of wages, the goal set by present general policy. A rate of payment which is satisfactory for the work of one wage earner will provide insufficient income as the number of his dependents grows, however. The great majority of children fall in the lowest income per person groups. From the Vancouver data[4] it was found that 95 per cent of the children (16 years of age and under) were in families with income per person of less than $600. In St. Hyacinthe[10] nearly 93 per cent of the children (17 years of age and under) were in families whose incomes averaged less than $500 per person. By means of family allowances, therefore, a direct attack has been made on the ill effects of low income per person. In the redistribution of income thus provided for, families with lowest incomes per person will be the chief beneficiaries, and it may be expected that a substantial portion of their increased expenditures will be for food.

Dietary Status.—The delegates to the United Nations Conference on Food and Agriculture in 1943 agreed that it was the responsibility of each government to ascertain the food consumption habits and the nutritional status of different sections of its population. Even before those discussions the importance of food consumption by farm families to their social and economic welfare had been recognized in the work of this Division.

In connection with the level of living studies which have been carried on in the western provinces the place of food in the farm economy is being examined and some evaluation of its adequacy is being made from the quantities of protective foods consumed, or on the basis of dietary habits. Records of the food eaten by individuals living on approximately one hundred farms in Stormont County, Ontario, were obtained in three weekly periods during 1942-43. The latest dietary survey completed was that in which the food consumed in one week in the spring of 1944 by twenty farm families of Ile Perrot, Quebec, was measured.

The money value of yearly food supplies, estimated by the farm housewife or operator, was found to be closely related to the nutrient values of the food eaten in Stormont County, and the diets of the Ile Perrot families also improved with larger expenditures for food. No inquiry was made as to the income of those survey families but it is very probable that expenditure for food on farms is dependent on income per person as many surveys in urban areas have shown it to be. Although the two surveys above were conducted on too small a scale to give conclusive results, their findings thus point to the importance of income to good nutrition for farm people. Satisfactory farm income has long been the goal of agricultural policy through the expansion of the market at home and abroad, improved marketing methods, heightened productivity and efficient farm management. Responsibility has recently been taken for minimum prices for farm products. Family allowances are direct income to many farm families as approximately one-third of Canadian children live on farms.

However, the sole requirement for adequacy of farm food is not money expenditure, according to the results of the two surveys made in eastern Canada. Amounts received of almost all of the food derivatives or constituents, calories, protein, minerals and vitamins, which were examined, were found to be closely related to the money value of the food produced at home. Of the above nutrients those in which the diets were most lacking (measured in terms of the allowances recommended by the United States National Research Council), were obtainable

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[9] Charlotte I. Johnston. Apple Markets in Nova Scotia Under War Time Control. Consumer Section. Unpublished.

[10] Charlotte I. Johnston and W. C. Hopper. Consumption of Dairy Products, St. Hyacinthe, Quebec, 1941. Unpublished.

from foods which could have been produced on the farms or from inexpensive cereals. Some of the effort spent in gaining money to be laid out in the purchase of food might have been employed in producing food of higher nutrient value for home consumption. Further investigation into actual food consumption on farms, and the relative costs and nutrient values of bought and home produced food is necessary in the various regions of Canada.

The Stormont County study revealed that the children who carried lunches to school received smaller proportions of the allowances recommended of each of the food constituents examined than did children of the same locality who ate their noon meals at home. The problem of school lunches for country children arises from physical as well as economic conditions, and requires special attention. Its solution is one of the means suggested by surveys of fostering the improvement of Canadian nutrition "up to a level worthy of so great a food producer" to which we are committed.

IMPROVING OUR FOOD DISTRIBUTION

Flora M. Webster

The United Nations Conference on Food and Agriculture has declared that "The primary responsibility lies with each nation for seeing that its own people have the food needed for life and health . . . " While general social and economic conditions are the most important factors influencing the demand for food, there exist always, poorly-fed groups of people needing special attention. Recognizing this fact, the Conference recommended "Some form of direct action to make protective foods available free, or at low prices, to groups with inadequate diets". Such measures not only help to improve health but also increase domestic markets for agricultural products.

A variety of special measures for improving food distribution have been tried in different countries both before and during the war. Some programs which may be adaptable to peacetime conditions in Canada are discussed here.

School Lunch Program.—School-aged children are listed among the vulnerable groups likely to need continuous assistance in the form of extra or more nutritious food. In this country, through local and provincial action, school lunches or supplements such as milk, are served now in a limited number of schools where there are widely varying opinions as to what constitutes a school lunch. The co-ordination of existing school lunch schemes into a national program, with regulations as to the foods served and the conditions under which they are served, would make a real contribution to the health of Canadian children. Financial assistance from interested governments would be necessary to put such a plan into operation.

The Advisory Committee on Reconstruction, in its report on agricultural policy, has recommended that government departments dealing with agriculture and health support a national school lunch program. The Canadian Council on Nutrition also has drawn up plans for the establishment of such a program.

An experiment carried on in Toronto illustrates the efficacy of a good school lunch. A group of thirty boys between the ages of nine and twelve years were offered a nutritionally-adequate free lunch each school day during a three-month period. It is reported that the average gain in weight per boy was double the normal gain for healthy children of the same ages. The experiment also demonstrated that the percentage of the child's total food requirements per day obtained from one relatively low-cost lunch can be sufficiently high to ensure an adequate diet when added to whatever foods he might choose to eat at other meals. The program was not only of direct benefit to the children concerned

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[11] Charlotte I. Johnston and W. C. Hopper. Consumption of Food on Farms, Stormont County, Ontario. Unpublished.

[12] Flora M. Webster and Margaret S. McCready. A Dietary Survey in Farm Households, Ile Perrot, Quebec. Canadian Journal of Public Health. April, 1945.

but it was obvious that it could be counted on as a factor in influencing the choice of foods at home.

The question arises as to what extent school lunches may lower the total quantity of food consumed at home. When participants are from low-income families, the effect is thought to be negligible. Moreover, the serving of milk in schools has tended to develop the milk habit rather than decrease the home consumption of milk.

Restricted Food Voucher Subsidy.—Disposal of surplus agricultural products by means similar to the United States Food Stamp Plan have not been common in this country. Early in 1939 supplies of butter were greatly in excess of domestic demand. The exporting of a sufficient quantity of butter to relieve the situation was not considered profitable at that time as the necessity of meeting competition in the export market had a tendency to depress prices in Canada. Vouchers for approximately three million pounds of butter, redeemable from Dominion government funds were distributed to relief recipients and to low-income families over a period of several weeks. The distribution plan[1] constituted an increase in butter purchasing power as a family on relief received an additional pound for each pound procured through ordinary relief channels.

This type of subsidy, in which the extra amount of food is dependent upon the amount customarily obtained, tends to freeze the normal expenditure for the food item and insures increased consumption. It is thought to bring, in general, greater benefits on the side of food production and marketing than a subsidy such as a direct gift of food stamps which may cause diversion of the subsidy to non-food uses. A survey showed that the gift of vouchers caused a considerable increase in the consumption of butter by the families receiving them in Canada. Surplus distribution plans of this nature are based largely on the need for disposition of stocks of one or more foods which might depress agricultural prices. Such plans relieve the market and supply extra foods to certain groups for limited periods of time. On the other hand, they give little consideration to the continuous dietary needs of the people unless flexibly designed as a part of a national food policy.

Reducing Price of Food.—Wartime food subsidies intended to prevent inflation may be adaptable to programs for equitablizing food distribution in peace time. Investigations following the introduction of a consumer milk subsidy in Canada showed that the subsidy was a factor contributing to the increase in the sale of fluid milk. Such a policy benefits all consumers but is of special benefit to low-income families as it is extremely difficult to supply sufficient quantities of milk on a limited food budget.

Quality of Foods.—Improving the quality of foods can make a substantial contribution to improved nutrition. From time to time it has been pointed out that some members of the vitamin B complex are among the food constituents in short supply in many Canadian diets. Whole wheat is a good source of many of the B vitamins but unfortunately a large proportion of the vitamins are lost in the ordinary process of milling white flour. While experiments indicate that it is not difficult to cause children to like and choose whole wheat bread, the fact remains that most of the bread consumed in Canada is white. Since white bread and flour are an important part of our national diet, efforts were made to develop a white flour which would retain a high proportion of the vitamins originally present in the wheat. In 1941 Canada Approved vitamin B white flour was produced by Canadian millers. Bread made from this flour has been offered for sale at no increase in price but has not been widely used. If it is agreed that a satisfactory loaf can be made from the flour and if a higher consumption of some of the B vitamins would insure better health to Canadians, the more general use of the flour for the baking of bread by commercial bakeries, would seem desirable.

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[1] **For details *see* The Economic Annalist, Vol. x, No. 4, August, 1940.**

Reinforcement of foods has not been widespread in Canada. For some years certain foods, such as milk in its various forms, have been reinforced with vitamin D by irradiation. If practicable methods of adding a controlled amount of vitamin D to a higher proportion of our milk supply could be adopted, it would be an important step forward in the field of child welfare. Iodine has been added to some of our common salt. The incidence of simple goitre in certain areas of Canada would seem to warrant a more general use of iodized salt if no other prophylactic measure is advocated for this country. Worthy of note is the recent appearance of vitaminized apple juice which may be a factor in increasing the Canadian supply of ascorbic acid, the intake of which is thought to be below a desirable level.

While the retention of more of the nutrients originally present, as in the milling of Canada Approved flour, is recognized as the best method of conserving food value, the extended practice of reinforcing certain popular foods would appear to hold possibilities for improving the national nutritional status, provided the foods reached the particular groups who are most in need of them. Government regulations, controlling the degree of reinforcement and other factors, would be necessary to prevent exploitation of the public. Although there is no evidence of gross malnutrition in Canada, no possible measure for supplying extra food constituents can afford to be overlooked until there is definite proof that no further benefit to health could be derived.

Industrial Cafeterias.—A concentrated effort has been made to improve and maintain the health of war industry employees through the promotion of cafeterias supervised by dietitians. Effects of installation of cafeterias have been measured in terms of such factors as increased production, decreased numbers of accidents and less absenteeism. The desirability of continuing the program is obvious.

General economic policies which ensure adequate incomes are recognized as the most important factor in increasing food consumption. However, special measures such as some of those mentioned above, and others, by providing nutritional aid to groups needing it most, increase the demand for agricultural commodities and tend to direct production to foods most essential for health. Such programs, to be effective, must be applied on a national scale under the co-operative direction of government departments concerned with both the requirement and production of food.

FARM MACHINERY TRENDS IN SASKATCHEWAN

M. E. Andal and J. D. Neilson

During the early thirties farmers in this Province experienced severe drought conditions and abnormally low prices. These and other circumstances prevented farmers from purchasing numbers and the types of machines desired. In the early forties, labour and material was diverted to war needs and the production of farm machinery had to be drastically reduced. It is generally conceded that major changes in types of farming, sizes of farms and cultural practices have made themselves felt in changes of farm machinery needs. Due to these conditions there appeared a tremendous backlog of machinery requirements. In the war years exceptionally high yields were accompanied by higher prices and the dire need for farm machinery was therefore backed by ample purchasing power.

It was with these conditions in mind and the need to maintain farm production that the National Committee on Agricultural Engineering requested the Economics Division of the Dominion Department of Agriculture to inquire into the machinery situation in all provinces. This inquiry was to determine numbers, types and sizes of machines on the farms and to appraise needs and trends in the future.

In Saskatchewan the study began in November and it was planned to obtain approximately 2,600 records. The assistance of the field staff of the Country Organization Department of the Saskatchewan Co-operative Producers Limited and some of the Agricultural Representatives of the Saskatchewan Department of Agriculture were enlisted to aid in the enumeration[1].

The analysis was conducted under three main sorts, namely, census division, size of farm and soil. The size of farm and soil sorts were sub-sorted into the parkland and prairie regions. The parkland region included the black, degraded black and grey wooded soil zones while the prairie region included the brown and dark brown soil zones. The various sizes of farms used were the one-quarter, one-half, three-quarters, section, and over a section farms. Soil types were placed in six groups reflecting mainly the suitability for wheat growing. The comparative ratings of the soil types were based on reports made by the Soils Department of the University of Saskatchewan.

The survey indicated that there has been a substantial increase in the size of farm in both the parkland and prairies regions. The average cultivated acreage per farm in the prairie region ranged from 720 acres on the heavy textured soils to 554 acres on the very poor soils. In the parkland region the average cultivated acreage ranged from 437 acres on the heavy textured soils to 189 acres on the very light textured soils. As would be expected the average cultivated acreage per farm in the prairie region was substantially larger than that of the parkland region. The proportion of summerfallow to cultivated acreage in the prairie region was 35·9 per cent, while the proportion in the parkland region was 29·8 per cent.

The general picture shows a great demand for machinery in all parts of the province. This study indicates that for the more important machines, a larger number are needed than are estimated to be in use. Especially was this the case for combines, swathers, power binders, one-way discs and trucks. Threshers, horse binders and grain drills were the least needed of the more important machines.

Machines needed mostly in the next two years, as indicated by this survey, are combines, swathers, tractors, power binders, pick-ups, trucks and one-way discs.

There has been a rapid rate of change in the trend toward mechanization during the war years due to the shortage of labour. This trend has been accompanied by an improvement in the efficiency and design of tractors. Higher compression rations for higher octane gasolines, cheaper fuels and rubber tires have decreased tractor operation costs considerably. Costs of operating tractors of similar size in 1939-40 were considerably below the 1930-31[2].

In the Elrose-Rosetown-Conquest area[3], an area covering twelve rural municipalities, it was indicated that 65·5 per cent of the farmers used tractor power only; 14·5 per cent used a combination of tractor and horse power; 12·9 per cent used horses alone as a source of power; and 3·1 per cent of the operators hired all the field work done. In 1939, 46·8 per cent of the farmers used tractor power only; 24·3 per cent used a combination of tractor and horse power and 27·0 per cent used horses alone. Only 1·9 per cent hired all the field work done in 1939.

Tractors.—The three-plow tractor was found to be the most common size in both the parkland and prairie regions. The size of tractor varied with the size of farm. The two-plow tractor was the most common size on quarter-section farms in the parkland region, 55·6 per cent of all tractors, while the three-plow size was the most common on quarter-section farms in the prairie region, 60 per cent of all tractors. Tractors on quarter-section farms in the parkland region had an average age of 3·4 years less than those on quarter-section farms in the prairie region. The smaller two-plow tractor has been a more recent development and these were purchased mainly in the parkland region. The three-plow tractor was most common on half, three-quarter and section farms, while four-plow tractors were most common on the farms over a section in size in both regions.

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[1] The final number of questionnaires obtained and used in the tabulations was 1,736. A total of 969 was obtained by the fieldmen of the Saskatchewan Wheat Pool, 542 by the Agricultural Representatives and 225 by the Dominion Economics Division from farmers and students in Agriculture attending the University of Saskatchewan.

[2] R. A. Stutt—Costs of Tractor Operations Under Average Farm Conditions in Saskatchewan, 1939-1940. Economic Annalist, February, 1942.

[3] R. A. Stutt—The Machinery Situation in the Elrose-Rosetown-Conquest Area. 1944 Economic Survey, Economics Division. Unpublished preliminary report.

The size of tractors needed was significantly larger than those in use. The increase in size of tractors needed is no doubt associated with the increase in size of farm that has taken place. Of the tractors needed in the parkland region, the three-plow tractor was most common on quarter, half and three-quarter section farms, while the four-plow tractor was the most common size needed on farms of one section or more in size. Similar increases in size needed were noted for farms in the prairie region.

It was found that 62·6 per cent of all tractors in the survey sample were of the four wheel type on steel. Thirty per cent were of the four wheel type on rubber. Proportions of other tractor types were two per cent row crop steel, 2·4 per cent row crop rubber and the remaining three per cent were crawler type tractors. In the parkland region 65·4 per cent of the tractors were four wheel on steel compared with 59·6 per cent in the prairie area. This difference was no doubt associated with the greater amount and type of breaking that was necessary in the northern areas. Steel-wheeled tractors are generally used for breaking in the pioneer areas. The lowest proportion of four wheel tractors on steel were found on the heavy textured soils in both areas; the proportion being 53·1 per cent in the parkland region and 43·8 per cent in the prairie region. Rubber tired tractors were most common on the clays and silty clay loams in the parkland region and the highest proportion of rubber-tired tractors in the prairie region were found on the very heavy textured and the very light textured soils.

The change in type of tractor needed as compared with type of tractor in use was even more significant than the change in size. Only 7·7 per cent of all tractors needed were of the four-wheel type on steel, while 86·0 per cent were of the four-wheel type on rubber. Row crop and crawler type tractors needed were in about the same proportion as the numbers in use. Census division 2 in the south-central part of the province shows the most significant change. This census division had the highest proportion of four-wheel tractors on steel in use (75·4 per cent) and of the tractors needed 98·4 per cent were on rubber. There appeared to be no definite correlation between the proportion of rubber-tired tractors needed and the soil groups, although the poorer soil types generally indicated a higher proportion of rubber-tired tractors needed. The highest proportion of crawler-type tractors needed (10·7 per cent) were in the extreme northwest corner of Saskatchewan's agricultural area. Crawler-type tractors were shown to be needed in the heavier textured soil areas of the province, on which there are generally larger farms. The highest proportion of row crop tractors needed (7·5 per cent) was in the extreme southeast corner of the province in census division 1.

Combines.—The most common size of combines on parkland farms was eight feet, while that on prairie farms was 12 feet. The size of combine also varied with size of farm. In the parkland region the six-foot combine was most common on half, three-quarter and section farms and eight-foot combines on farms over a section in size. In the prairie region six-foot combines were most common on half-section farms, ten-foot combines on three-quarter section farms and twelve-foot combines on farms of a section and over in size. Of the combines needed, the proportions of small and of large combines were less than the proportions of these sizes in use. The moderate sized ten and twelve-foot combines were required in most cases, even for the relatively large and small sized farms. The proportion of moderate sized ten and twelve-foot combines needed was significantly greater than those sizes in use. Numbers of all sizes of combines needed were greater than numbers of combines in use, but the higher proportion of moderate sized combines needed indicates the general trend.

The auxiliary motor combine on rubber was the most common type in the parkland area, while the auxiliary motor on steel was the most common type in the prairie region. In the parkland region the auxiliary motor combine on rubber was most common on the heavy and moderately heavy soils, while the auxiliary motor on steel was the most common type on the light textured soils. The power take-off type on rubber was most common on the medium textured soils. In the prairie region the auxiliary motor combine on rubber was most common on the very heavy soils, while the auxiliary motor type on steel was most common in the other soil groups.

Of the combines needed, it was shown that the trend is toward auxiliary motor combines on rubber and toward self-propelled combines. In the parkland region, the proportion of auxiliary motor combines on rubber changed from 29·3 per cent in use to 48·1 per cent needed. The proportion of self-propelled combines increased from 17·4 per cent in use to 29·5 per cent needed. An even more significant change was noted for the prairie region; 8·6 per cent of the combines in use were of the self-propelled type, while 36 per cent of the combines needed were of this type. The self-propelled combine is the most common type needed on the very good wheat lands, the light textured and very poor soils, and the most common type needed for the prairie region as a whole. The highest proportion of combines needed on clay loams and loams were of the auxiliary motor type on rubber.

One-way Discs.—One-way discs ranging in size from five to six feet were most common in the parkland region, while sizes from seven to eight feet were most common in the prairie region. The size of one-way discs varied directly with the size of farm. In the parkland region, one-way discs in the five to six foot range were most common on all sizes of farms up to and including the section farms. On farms over a section in size, one-way discs ranging from seven to eight feet were most common. Similar sizes of one-way discs for the various sizes of farms were noted for the prairie region, except in the case of section farms where the seven to eight foot one-way was most common. There is practically no change in the size of one-way discs needed as compared with the sizes in use.

Practically all of the one-way discs included in the sample were on steel. A small proportion of those needed were on rubber tires. It has been shown recently in extensive field tests that the rubber tired one-way disc is greatly superior to the steel wheel one-way disc now in use.

Trends in Other Types of Special Equipment.—Trends in method of harvesting were definitely towards the use of the combine and away from the use of the threshing machine. This was indicated by the relatively high numbers of combines, pick-ups and swathers needed as compared with the numbers of these machines in use. It was shown that the numbers of threshers needed were only 43·5 per cent of the numbers in use. A trend was indicated in swathers to power take-off types particularly on rubber.

The small 16 to 20 run size of grain drill appears to be on the way out. Needs indicated that most purchases would be of the 21 to 28 run range, except in pony press drills where the eight run size was popular on lighter textured soils of certain local areas. Few purchases of shoe and single disc drills were indicated. About 85 per cent of drills needed were either of double disc or press type.

In every census division there was an increase in size and numbers of trucks needed as compared with sizes and numbers in use. This trend was accompanied by a decrease in numbers of automobiles needed as compared with the numbers in use.

Conclusions.—It is quite likely that the next few years will see several changes in sizes and types of farm machinery in use in Saskatchewan. Shortage of labour during the war years has speeded up the use of newer kinds of farm machinery, particularly combines. Farmers have found these newer kinds of machines to be quite economical. The move toward larger size of farm will likely carry with it a move toward larger sizes of farm machinery to operate these farms. The almost complete change over from steel to rubber on certain machines is also in sight.

New kinds of machines have made their entry into the parkland area during the war years and will most likely establish themselves there in the years to come. New kinds of labour saving machinery, such as haying machinery, will likely be in greater demand, particularly in the southwest part of the province. The purchasing power which has been accumulated on farms during the war years will no doubt help to speed this change. Looking at the machinery picture from a broad point of view, therefore, the trend would seem to be to the newer kinds of larger sized rubber mounted machinery in replacement of the older more standard types which have been in use in Saskatchewan for many years.

BOOK REVIEW

THE GANARASKA WATERSHED.—Edited by A. H. Richardson, Chairman, Ontario Government, Interdepartmental Committee on Conservation and Post War Rehabilitation

The report on the Ganaraska Watershed was compiled and published under the sponsorship of the Sub-Committee on Construction and Development of National Resources, of the Dominion Advisory Committee on Reconstruction and in the words of the Chairman, Dr. R. C. Wallace, "Its purpose is to give more exactness to (1) the specific procedure involved in the conservation and techniques involved in the conservation and rehabilitation of a given area (2) the cost of necessary remedial projects (3) the amount and types of employment that will be provided.... It thus provides an opportunity to review and improve the technique of conservation surveys such as are still necessary in other parts of Southern Ontario as well as elsewhere in Canada."

The Ganaraska River flows through Durham and Northumberland Counties in Ontario—one of the oldest settled parts of the province. This area was recommended for study by the Guelph Conference because of the severe flood damage caused by the river in Port Hope and because of the severe erosion to be found near the headwaters of the Ganaraska.

The report itself is very comprehensive and deals with many phases of the development of the area. The historical background starts with 1784 and 1788 when the first land transfers were made from Indians to the whites and goes on to trace the development and the building of roads and railroads in the area and harbour facilities in Port Hope. The population of the area reached a high mark in 1881 when there was great activity in lumbering, milling and numerous small industries in the villages within the watershed. After 1881 due to the exhaustion of the timber and the fact that much of the land in the north was not suited for agricultural production, young people continued to migrate from the area with the result that the population decreased and several small communities disappeared altogether.

In pioneer times, wheat was the principal crop in this area and as early settlers had no knowledge of modern crop rotations and did not fertilize the land, soils soon became exhausted. Later on with the raising of cattle, a marked improvement of soil fertility was brought about.

The question of erosion is discussed at some length in the report and although erosion has been going on since the beginning of time, its control on this continent did not receive serious attention until recently. Seventy-five per cent of the silting in Port Hope harbour is caused by the Ganaraska River carrying soil from the watershed. Dredging carried on in the harbour of Port Hope since 1875 have taken out as much as 32,000 cubic feet in one year.

Special surveys made in the Ganaraska Watershed area include reports on Climate by the Meteorological Division of the Department of Transport, on Soils, Soil Erosion and Land Use by the Experimental Farm Service of the Dominion Department of Agriculture in co-operation with the Ontario Agricultural College and on Economic Aspects of Agriculture in the area including the living standards of farmers by the Economics Division of the Dominion Department of Agriculture.

The main survey was conducted by an extensive field staff under the supervision of Mr. Richardson and each section of each lot was mapped with the aid of aerial photographs and a land use map prepared which showed type of land, both agricultural and forest, water supplies, building, road conditions, vegetation and wild life.

As a result of information obtained in the various surveys, an area of 20,000 acres of marginal and submarginal land in the northern part of Hope and Clark township was designated as a forest area in which conservation measures should be undertaken. In addition, throughout the whole watershed there are small areas of waste land on private farms. Owners of such land should be encouraged to plant these and where areas are too large for individual effort, municipalities should assist.

In addition, the Report recommends that in order to prevent further floods in the town of Port Hope three large dams should be built to increase the summer flow. Other old dams might be rebuilt to impound water for agricultural and wild life ponds.

The report itself goes into some detail to show the amount and cost of labour that could be profitably employed in the post-war era on this conservation work. Recommendations included in the report deal with matters pertaining to legislation, employment, survey and additional research that might well be carried on in the area.

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THE ECONOMIC SITUATION

Industrial employment in Canada contracted at the beginning of August. This was the first decline at midsummer in the years since 1938. The decrease in employment is reflected in the decline in the index numbers of physical volume of business. This reduction of activity has been slight but continuous from April, 1945. The index of employment at August 1 was 175·0 as compared with 175·5 at July 1, 1945, and 184·3 at August 1, 1944. The August, 1945 employment index was the lowest recorded since June 1, 1942. It is likely that with cancellation of war contracts and conversion adjustments, total employment may continue to drop for the next month or so.

Wholesale prices of all commodities and of farm products after reaching a wartime high showed a slight decline in August. In the case of farm products, the decline in the wholesale price index was due to a seasonal decline in prices of potatoes, onions, hay, live stock and poultry.

First Estimate of Canada's 1945 Grain Crop.—Total 1945 wheat and coarse grain production is below that of the 1944 production. The wheat crop for all Canada is estimated at 321·4 million bushels. This crop is 114 million bushels less than that of 1944, and the average yield of 13·7 bushels per seeded acre is the lowest since 1937. This year's wheat production falls short of three of the large wartime crops. The oat crop is estimated at 388 million bushels. Due mainly to drought conditions in the Prairies, the crop is 111 million bushels below the 1944 total. The barley crop was also smaller, drought conditions being the major cause. The flaxseed crop, due to reduced acreage, was down to 7·4 million bushels as compared with 9·7 million bushels in 1944.

Wheat Policy.—Under the new policy, the Canadian Government will support the price of wheat at not less than one dollar per bushel, basis No. 1 Northern, in store Fort William/Port Arthur or Vancouver, on the authorized deliveries for each crop year for the five-year period ending July 31, 1950. For the balance of the 1945-1946 crop year, the Canadian Wheat Board initial advance will continue at $1.25. At the same time, it has set an export price ceiling of $1.55 per bushel, basis No. 1 Northern, Fort William/Port Arthur or Vancouver.

Meat Rationing.—The Minister of Finance in a statement in Parliament stated "It seems to me that the first reason why we should ration meat in Canada, and continue with the rationing we have introduced, is in the discharge of our obligations". Meat rationing was re-introduced on September 10, and is designed to reduce consumption to the annual rate of about 130 pounds per capita. This is a figure about 12 per cent below 1944 but about 12 per cent above pre-war.

UNIVERSITY OF TORONTO

ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Living Costs and Productions Indexes Computed by Dominion Bureau of Statistics.

Year	Wholesale Prices 1926=100				Cost of Living 1935-39=100		Commodities and Services used by Farmers, 1935-39=100		Production
	All commodities (1)	Farm products (2)	Field products (3)	Animal products (4)	Urban Living Costs (5)	Farm Living Costs (6)	Eight Factors (7)	Eleven Factors (8)	Physcial volume of business (9)
1913....	64·0	64·1	56·4	77·0	79·7	79·6	....	....	....
1914....	65·5	70·2	65·4	78·3	80·0	82·0	....	....	....
1915....	70·4	77·9	76·9	79·5	81·6	86·3	....	....	....
1916....	84·3	89·8	88·8	91·4	88·3	93·6	....	....	....
1917....	114·3	128·5	134·5	118·4	104·5	111·6	....	....	....
1918....	127·4	132·6	132·0	136·6	118·3	131·4	....	....	....
1919....	134·0	146·7	142·6	153·5	130·0	143·0	....	....	62·3
1920....	155·9	160·6	166·5	150·8	150·5	170·7	....	....	65·9
1921....	110·0	103·7	100·3	109·5	132·5	139·5	....	....	58·1
1922....	97·3	88·0	81·4	99·0	121·3	127·5	126·9	133·2	69·1
1923....	98·0	81·5	73·3	95·1	121·7	127·9	118·7	128·7	74·7
1924....	99·4	88·1	82·7	97·2	119·5	125·1	122·5	132·6	73·9
1925....	102·6	101·0	98·2	105·6	120·6	123·6	124·3	131·8	79·4
1926....	100·0	100·0	100·0	100·0	121·8	120·9	120·6	129·3	87·3
1927....	97·7	102·1	99·9	105·7	119·9	119·5	120·9	130·1	92·7
1928....	96·4	100·7	92·6	114·3	120·5	118·3	119·4	128·2	102·4
1929....	95·6	100·8	93·8	112·5	121·7	117·4	118·4	127·5	109·6
1930....	86·6	82·3	70·0	102·9	120·8	113·7	105·7	116·3	95·6
1931....	72·1	56·3	43·6	77·6	109·1	103·7	91·8	100·8	81·7
1932....	66·7	48·4	41·1	60·7	99·0	97·7	88·7	93·4	68·7
1933....	67·1	51·0	54·8	59·7	94·4	95·7	88·4	90·0	69·6
1934....	71·6	59·0	53·8	67·7	95·7	97·8	96·8	96·0	82·2
1935....	72·1	63·5	57·3	74·0	96·2	97·9	95·6	96·0	89·4
1936....	74·6	69·4	65·8	75·3	98·1	98·3	98·4	98·0	98·0
1937....	84·6	87·1	88·3	85·0	101·2	102·9	108·5	105·4	107·2
1938....	78·6	73·6	69·0	81·3	102·2	102·0	101·1	101·5	98·6
1939....	75·4	64·3	54·2	81·2	101·5	99·5	96·1	99·1	106·9
1940....	82·9	67·1	55·9	85·2	105·6	108·6	102·3	105·7	124·3
1941....	89·9	71·2	56·5	95·8	111·8	114·2	108·2	114·1	165·0
1942....	95·6	82·5	66·5	109·2	116·8	119·2	119·7	128·0	202·2
1943....	99·9	95·9	81·6	119·9	118·4	121·7	122·4	136·0	235·9
1944....	102·5	102·9	91·8	121·3	118·9	122·8	125·7	138·8	236·3
1944									
July....	102·5	102·0	91·8	119·0	119·0	....	....	....	232·2
Aug....	102·3	101·2	91·2	117·9	118·9	122·6	125·8	141·3	233·1
Sept....	102·3	101·0	91·0	117·8	118·8	....	....	....	231·0
Oct.....	102·4	103·0	91·6	122·0	118·6	....	....	....	228·0
Nov....	102·4	103·1	91·5	122·5	118·9	....	....	....	227·9
Dec....	102·5	103·3	92·2	122·0	118·5	....	....	....	233·0
1945									
Jan.....	102·8	104·4	93·5	122·7	119·0	122·8	125·3	137·4	228·8
Feb....	102·9	104·6	93·8	122·7	118·6	....	....	....	216·7
Mar....	103·0	105·1	94·0	123·6	118·7	....	....	....	225·2
April...	103·4	105·3	94·0	124·2	118·7	123·0	125·5	142·0	232·2
May....	103·0	104·6	94·8	121·1	119·0	....	....	....	218·6
June....	103·2	105·7	95·8	122·4	119·6	....	....	....	219·5
July....	104·0	107·8	99·2	122·3	120·3	....	....	....	213·7
Aug....	103·4	105·8	96·4	121·4	120·5	123·7	125·7	144·2	212·7
Sept....	102·7	103·5	94·0	119·5	119·9	....	....	....	205·3

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1. See Prices and Price Indexes 1913-1928, pp. 19-21, 270-289 and 1913-1939, p. 17.
2. Wholesale prices of Canadian products of farm origin only. See Prices and Price Indexes 1913-1937, p. 52, and Monthly Mimeographs 1943-44.
3. Wholesale prices of grain, fruits and vegetables.
4. Wholesale prices of animals and animal products.
5. See An Official Cost of Living Index for Canada, 1940.
6. Price Index Numbers of Commodities and Services used by Farmers (Revised Mimeograph).
7. Ibid 6. Includes prices of commodities in eight groups including farm implements, building materials, gasoline, oil and grease, feed, fertilizer, binder twine, seed and hardware.
8. Ibid 6. Includes the eight commodities indicated above plus tax, interest and farm wage rates.
9. Monthly Review of Business Statistics, p. 8 and Monthly Indexes of the Physical Volume of Business in Canada, supplement to the Monthly Review of Business Statistics November, 1932. Yearly index numbers for 1943, subject to revision.

FARM MANAGEMENT STUDIES AS AN APPROACH TO BETTER FARMING

B. A. Campbell and J. Coke

Tremendous strides have been made in the last forty years in all phases of scientific agricultural development. New crop varieties have been discovered, better methods of breeding and feeding live stock have been found, better machinery has been developed while marketing facilities for agricultural products have been improved and much has been accomplished in grading farm produce. In spite of all these advances however, a large percentage of farmers in Canada have not yet realized that the day of the self-sufficient farmer is past and that to make a success of commercial farming the farmer must be an efficient business manager. Farm management research provides a basis for the application of the best technical information to farming in order that the farmer may obtain the highest return from his labour and investment. Farm management studies carried out by the Economics Division of the Department of Agriculture during the last fifteen years have attempted to show farmers the factors responsible for increased returns. To do this it has been necessary for the research worker to collect and analyse information on all phases of farm business and make available information based on farmers' experiences to show what may be accomplished through efficient farm management. Conditions change from year to year and vary from region to region and by type of farming. It is therefore necessary, if maximum use is to be made of farm management studies, that more or less continuous records be maintained. Farmers may thus be shown that with proper management, farms can be put on a paying basis, and the higher the efficiency in the use of land, labour, live stock and capital, the higher will be the net returns.

Farm Management Studies conducted by the Economics Division of the Dominion Department of Agriculture since 1930 have covered many fields of farming activities and have covered periods of from one to four years, but have been confined to definite areas.

Studies of farm business management in some instances have arisen out of difficulties facing the industry as a whole rather than from the farmers desire for information on efficient business methods.

One of the first projects undertaken by the Economics Division was a study of sheep ranching[1] in the Provinces of Saskatchewan, Alberta and British Columbia during the three successive years 1929, 1930 and 1931. This was an effort to determine (*a*) the factors responsible for the success or failure of sheep ranchers; (*b*) the weakness in the present system of lamb marketing and (*c*) the adjustments necessary to improve the economic position of the industry.

It was found that the percentage of lamb crop, weight of lambs and size of business unit were the factors most closely associated with individual success in sheep ranching. As far as size of business was concerned, the group of sheep ranchers in Alberta and Saskatchewan having between 1,500 and 2,000 breeding ewes received the largest ranch income under the prices that prevailed during the time of the survey. Better rams, systematic culling and scientific breeding were needed on many ranches to improve the quality of the wool and lamb produced.

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[1] Kindt, Lawrence E., An Economic Analysis of the Sheep Ranching Industry in Western Canada, Mimeographed Report, Dominion of Canada, Department of Agriculture, April, 1933.

Another type of study that was made by the Economics Division early in 1931 was one dealing with farm power in Western Canada.[2] This survey was limited to an analysis of one factor of farm efficiency, namely farm power and its effect on the ultimate farm income. Studies of this type give essential information on farm business organization but due to the rapid development of machinery, should be repeated at frequent intervals.

In 1935 a comprehensive study of potato production in New Brunswick[3] was undertaken as a phase of research in potato production and marketing in Eastern Canada.

It may be observed that while the average cost of production per acre in 1935 was between $70 and $80 per acre, 5 per cent of the farmers reported costs below $60 per acre while 8 per cent showed costs totalling more than $100 per acre. With gross returns per acre from 1926 to 1935 averaging $78.63 it is easy to understand why many producers in the area were in financial difficulties.

Two studies of a similar type to those already mentioned were undertaken in Ontario. One dealt with the sugar beet production[4] while the other dealt with hog production[5]. In the sugar beet project an analysis of the cost of production was featured. The hog study, on the other hand, was confined to farm management and was designed to appraise the place of hogs as an important enterprise on farms in selected areas of the province. One of the variations of this study was the selection of successful farms in each area where the study was undertaken as examples of successful farm management.

In summarizing the experience of the farmers from whom the information was obtained the authors stated "that the size of the litter weaned or the number of pigs marketed per sow, the amount of feed required to produce a pound of gain, the quality of the hog produced, the time of year that hog was marketed and the amount of labour required all have an important bearing on hog returns."

The most extensive farm management work carried on by the Economics Division has been in the field of dairy farming. In Ontario a very comprehensive study was started in 1936. It included representative shippers of milk to fluid markets, to cheese factories, concentrated milk plants and cream shippers in most dairy areas of Ontario. This study covered a four year period and was only discontinued in 1940 because of war conditions and lack of necessary staff to continue the work. A complete report on this study has not been published but several preliminary reports [6], [7], [8] have been issued.

One report covering the first year of the Dairy Study showed that profitable operation of dairy farms was found to be closely associated with the larger than average size of business, with efficiency in crop and livestock production and economy in the use of labour and capital. Farms that were below average in all of these factors had operator's labour earnings of only $28 per farm and the cost per hundredweight of milk produced was $2.32, while those that were above average in all respects averaged $19.23 in earnings and the cost of production of milk was $1.77 per hundredweight.

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[2] Grest, E. G., An Economic Analysis of Farm Power in Alberta and Saskatchewan, Dominion of Canada, Department of Agriculture, Mimeographed Report, April, 1941.

[3] McArthur, I. S., An Economic Study of Potato Production in New Brunswick. Technical Bulletin No. 8, Dominion of Canada, Department of Agriculture, May, 1937.

[4] McArthur, I. S. The Production of Sugar Beets in Southwestern Ontario. Dominion of Canada, Department of Agriculture, Mimeographed Report, April 1941.

[5] Gorsline, F. H. and Leckie, H. K., The Place of Hogs on Ontario Farms. Dominion of Canada, Department of Agriculture, Farmer's Bulletin No. 106, November 1941.

[6] Hare, H. R., The Dairy Farm Business of the Ontario Concentrated Milk Producers for the Year Ending June 30, 1937. Preliminary Mimeographed Report, out of print. Dominion of Canada, Department of Agriculture.

[7] Hare, H. R., The Dairy Farm Business in Ontario. Dominion of Canada, Department of Agriculture. Mimeographed Report, Preliminary June 1944.

[8] Hare, H. R., Four Years of Milk Production in Ontario. Dominion of Canada, Department of Agriculture. Mimeographed Report, March 1942.

In one of these publications H. R. Hare, the author, states that "Attention has been drawn to the fact that a farmer has a large measure of control over his cost of production of milk but little control over the price which he received for it. These principles apply to all farm produce. In the light of these truths it would appear that a farmer's greatest hope of obtaining a high net income by personal effort lies in directing attention to means whereby his cost of production per unit of all farm products may be brought to a low point and in producing these products in sufficient volume to create for himself the desired net income from his farm business."

Since 1940 requests for similar studies for dairy farming have been received from Departments of Agriculture in Alberta and Manitoba. While the final reports of these surveys have not been published, the preliminary information[9] obtained has been used as a basis for agreements in respect to prices to be paid for milk in certain marketing areas. Both these surveys followed the same general outline as the Ontario Dairy Survey and while cost of production of milk was computed it was considered to be of secondary importance to the farm management analysis. All farmers who co-operated were supplied with statements showing how their farms compared with other farms in the district and in this way they were given direction as to ways whereby their incomes might be increased.

Another phase of agriculture which has been studied was that of cattle ranching in Western Canada[10]. This study was carried on as a part of a Prairie Farm Rehabilitation Administration program and the objectives as given in the introduction to a preliminary report, were as follows: "(1) to provide a body of information that will throw light on the economic condition of the industry, and its place in the national economy; (2) to ascertain the relative profitableness of diffierent systems of ranching; (3) to provide material for local and national research purposes and to obtain data likely to be of service in advisory work in connection with the internal organization and business management of individual ranches, such as size of ranch business, return per animal unit, distribution of capital and use of labour; (4) to obtain data that will be a guide in determining sound administrative policies for range lands as well as marginal and submarginal wheat land and (5) to provide information incidental to wartime and post-war production policies applicable to the range areas of Western Canada."

This study included sections of Saskatchewan, Alberta and British Columbia and information was obtained for crop years 1938-39, 1939-40 and 1940-41.

Results showed that labour was one of the largest items of expense in the cattle ranching industry and averaged 42 per cent of the total operating expenses on all ranches included in the survey. The size of business had an important bearing on the successful operation of a cattle ranch and while small units seldom provided sufficient income for large profits, they rarely suffered severe losses. Large ranches present opportunities for making large profits but encounter more serious problems of risk, management and finance than smaller outfits. The large business provides the opportunity for success but in no way assures it.

Since the war began, two farm management studies were conducted in apple growing districts in the Okanagan Valley of British Columbia[11] in 1940 and in the Annapolis Valley[12] of Nova Scotia in 1941. These were carried on primarily to obtain information on costs of production of apples and other factors affecting returns, which would enable the formation of a wartime apple marketing program acceptable to both government agencies and apple growers. While the results obtained on the cost of production of apples were of primary importance, sufficient information was obtained from producers to analyse the farm business setup. Reports to farmers showed the factors that were most important in reducing costs of production and thus increasing returns.

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[9] Patterson, H. L., The Dairy Farm in Alberta 1939-1943. Dominion of Canada, Department of Agriculture, to be published in 1945.

[10] Elliott, G. C. and Chattaway, G. D., Cattle Ranching in Western Canada. Dominion of Canada, Department of Agriculture, Mimeographed Report, December 1941.

[11] Campbell, B. A. and Hudson, S. C., Costs and Returns in the Production of Apples in the Okanagan Valley of British Columbia. Dominion of Canada, Department of Agriculture, to be published 1945.

[12] Campbell, B. A., Costs and Returns in the Production of Apples in the Annapolis Valley of Nova Scotia. Dominion of Canada, Department of Agriculture, to be published 1945.

A new type of farm management survey that has been initiated within the last few years deals with farming in the irrigated parts of Alberta[13]. The purpose of this study was "(1) to segregate and analyse the factors in farm management having the greatest influence on successful irrigation farming in Alberta, (2) to determine what net revenue could reasonably be expected from irrigated land under varying conditions of farm organization for retiring debts and for savings and (3) finally, to evaluate the differences in productivity and unit income of the irrigated areas compared with dry land areas."

As a result of the information obtained from this study it was possible to suggest a farm budget applicable in those districts where irrigation is feasible. This budget is based upon returns that might be expected under good farm management practices and is essential in developing an economic classification of land as well as other work associated with land utilization. Similar studies have been carried on in dry land farming areas in Saskatchewan and Alberta where land classification has been completed on a rather extensive scale.

Other results of this study showed that under the economic conditions existing at the time of the survey and considering the earning capacity of the land alone, some of the land in the area had no higher dollar value under irrigation than under dry farming.

In addition to the work in farm management already mentioned a great deal of research work has been carried on in both Eastern and Western Canada on different phases of land settlement.

During the last five years, crop yields for the most part have been above average in most sections of Canada. This fact together with higher prices for farm products has meant increased returns to the farmer. As a result many farmers have reduced farm indebtedness and are looking forward to the time when increased production of machinery will make it possible to expand their farm business.

Before increasing the size of the operation, however, the farmer should make sure that other factors of production are being used efficiently. Increased size does not necessarily mean increased returns and unless good farm business organization is followed, farmers will soon find themselves in financial straights.

Farm management studies may go a long way in showing farmers how their farm business might be improved. However, before this can be done farmers should be encouraged to keep proper records. These records need not be complicated but must be sufficiently complete and easily interpreted so that they may provide a basis for better methods of management. It is only through constant study that farm business organization can be improved.

The best guide for this purpose is a summarization of experiences of successful farmers. Farm management research provides just that. The good farmer understands that his income can be increased by the effective use of labour and capital in his business.

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[13] Spence, G. C. Kristjensen, B. H. and Anderson, J. T., Farming in the Irrigation Districts of Alberta. Dominion of Canada, Department of Agriculture, Unpublished.

WARTIME CHANGES ON FARMS IN THE ELROSE-ROSETOWN-CONQUEST AREA OF SASKATCHEWAN

R. A. Stutt

The magnificent response of farmers in Saskatchewan to increased demands for greater production of agricultural products under the impetus of war needs has been a stupendous effort. In relating the story of greater production of our agricultural industry many important changes in farm organization and management and in farming practices have remained unnoticed. This article aims to indicate some of the basic changes in farm set-ups in the Elrose-Rosetown-Conquest area as shown by a farm business study conducted there in the months of June, July and August, 1944.

This area in west central Saskatchewan is a typical prairie area, comprising relatively large representative blocks of each grade of wheat lands and lands unsuitable for cereal production, fit only for grazing purposes. The southwestern edge of the twelve rural municipalities lies within the Brown soil zones and the northeastern edge borders the park region. The main body is found in the Dark Brown (transitional) soil zone.

The western extension of the Missouri Couteau cuts through the area and along the escarpment the topography is rolling to steep. On the heavier textured soils, near Rosetown, Elrose and Glamis, areas of gently rolling or undulating and level topography are found. The topography of the light textured soils is mainly level to undulating, while the poorer areas are of dune formation.

Size of Farm.—Farms are relatively large in size in this area. In 1944 the average area of cropland for 595 farms within this block was 562 acres. This indicated some increase in size over the average of 528 acres reported in 1939. There was a reduction of about 10 per cent in the acreage seeded to wheat in 1944 as compared with 1939. Most of this decrease in wheat was taken up by a corresponding increase in the flax and barley acreage and some slight increase in summerfallow. The increase in the flax crop occurred mainly on the heavier textured clay and heavy clay soil, while the barley increase took place on all grades of land and sizes of farms. The barley acreage change was associated with changes in live stock numbers in that period.

Most of the increase in the average size of farm has been accounted for by an increase in the proportion of farms in size ranges over one section of land. There was a corresponding decrease in the proportionate number of medium sized, half and three-quarter-section farms, and about 11 per cent of all farms were less than 250 acres of cropland in both 1939 and 1944, indicating no change for this group.

Changes in Power and Equipment.—Associated with the increase in size of farm has been an increase in the use of tractors and power equipment. During 1943, 69·5 per cent of the farmers used tractor power only as compared with 46·8 per cent in 1939. In these respective years, 14·5 and 24·3 per cent used a combination of tractor and horse power, while 3·1 and 1·9 per cent hired all field work done. The proportion of farms using horses only, as a source of power decreased from 27·0 per cent in 1939 to 12·9 per cent in 1943, and was one of the most important changes in this area.

Practically all the farm operators on the clay and heavy clay soils used tractors only while even in the areas of lighter textured soils approximately half of all farmers were in this class. Farmers using horses only as a source of power usually operated three-quarter-sections of land or less. The use of horses was confined only to supplementing the tractor in rush periods on farms having between 400 and 700 acres of cropland.

A noteworthy change in farm practice in this period was the increased use of the combine as compared with the thresher. In 1943, 87·7 per cent of all the representative farmers in the survey sample, combined their crops either with or without a swather, as compared with 57·6 per cent in 1939. The main increase was in the method of straight combining and not in swath and combining with the aid of a pick-up attachment.

The Live Stock Picture.—While the main type of farm in this area is the single enterprise wheat farm, particularly on the heavier textured clay loam, clay and heavy clay soils and on the relatively heavy topography blocks, such as the Rosetown, Glamis, and Elrose districts, other parts which are of light textured sandy soils and rough topography have considerable numbers of live stock. In these other districts, wheat and live stock grazing farm units are predominant or else interspersed with wheat farms, while some ranch units are found in the area as well. In the Conquest-Harris and Laura sections more mixed type of crop-live stock or live stock-crop combinations are found, depending which is predominant. In the wheat and live stock grazing farm units, the grazing land is utilized mainly by cattle and to a small extent by sheep. These types of farms are found in the Birsay-Dunblane-Dinsmore area, particularly south of Dinsmore, and as in the case of the mixed crop-live stock combinations, are found along with wheat farms.

Numbers of live stock between 1939 and 1944 revealed an increase of 25 per cent in the cow population and 38 per cent in the other cattle group. The average number of cows per 100 farms was 515 in 1944 as compared with 411 in 1939. Cattle other than cows were 797 per 100 farms in 1944 as compared with 578 in 1939. Nearly double the numbers were found on the larger farms as compared with the smaller farms in both 1939 and 1944. On the smaller farms the 1944 cattle numbers represented about a 20 per cent increase while on the larger farms the increase was approximately 45 per cent.

Farms on heavy clays averaged 201 cows and 233 other cattle per 100 farms in 1939 and 261 cows and 407 other cattle per 100 farms in 1944. There was a direct relationship of numbers of cattle to soil type. Numbers increased gradually as the type of soil became inferior for wheat growing. The numbers on the heavy clays and clays were very few as compared with farms located on sands and fine sandy loams. Here the average number of cows per 100 farms was 933 in 1939 and 1,017 in 1944, and for the same respective pre-war and war years the numbers of other cattle per 100 farms were 1,300 and 1,433. This indicates an average of about 25 head on farms in the latter soil group as compared with 6 or 7 on the first soil group.

Very substantial increases in hogs were noted in these areas in 1944 as compared with 1939. In the pre-war years sows averaged less than one per farm and in 1944 about one and one-half per farm. The number of other hogs at June 1 increased from 663 to 1,100 per 100 farms during this period.

When analysed by size of farm, numbers of sows increased from 45 to 85 per 100 farms on the smallest sized farms and from 158 to 292 per 100 farms on the largest sized farms. Other hogs indicated also the same general increase. The largest numbers of hogs were found on the medium textured loam soils in 1939 and 1944. Farmers on the very light textured soils (sands and very fine sandy loams) increased the number of sows from 67 per 100 farms, in 1939 to 183 per 100 farms, whereas farmers on the heavy textured soils (heavy clays) only increased the sow numbers from 54 to 66 per 100 farms in the same period.

During this period, average numbers of horses decreased from 634 to 465 per 100 farms. Very significant differences were noted for farms on the superior wheat lands (heavy clays) as compared with the inferior soils. Numbers per 100 farms were 366 and 239 in 1939 and 1944, respectively, on the heavy clays, whereas 817 and 800 per 100 farms were found on the sands to very fine sandy loams in the same respective years. Substantially lesser numbers were found on the larger sized farms. Fifty-two per cent of the farmers farming land less than 250 acres of cropland used horses only as a source of power; 22·4 per cent farming between 250 and 400 acres; 3·9 per cent between 400 and 550 acres;

2·3 per cent between 550 and 700 acres and there were no farmers with over 700 acres of cropland using horses only. An additional 9 to 15 per cent used a combination of horse and tractor power.

Regarding post-war intentions, farmers were asked to indicate their plans for live stock. Out of a total of 582 farmers replying to this question for beef cattle, 82·5 per cent said they planned no change; 6·5 per cent indicated that they planned to decrease their herds; 4·8 per cent planned to increase numbers up to five head; 3·1 per cent had plans to increase herd numbers from six to ten head and another 3·1 per cent indicated they would increase their herd over that number. No assumptions were made regarding future live stock prices or any other factors, so that the replies indicate the farmer's own considered opinion as to future numbers over the present numbers. There did not seem to be any difference between the replies of farmers on different sizes of farms, but those on sands, very fine sandy loams, fine sandy loams and loams, planned to increase more than those on the heavier textured soils, indicating a trend to more of a wheat ranch or mixed crop-live stock combination, which is considered to be a more desirable type on these soils.

With respect to hogs, about 86 per cent planned to maintain the present numbers, about 10 per cent planned to decrease and only 4 per cent planned increases mainly in the one to five size group. It was indicated that decreases were planned largely on the large-sized farms (about a 12 per cent decrease as compared with 8 per cent on the small farms) and increases on the medium-sized farms. As far as soil was concerned, and closely associated with the size of farm, decrease was planned largely from the present small numbers on the heavier textured soils and to a lesser extent on the inferior light textured soils.

The Labour Situation.—The major reason for the basic changes in the size of farm, farm power and farm operations has been the shortage and the cost of farm labour. In this area there was a reduction of about 11·6 per cent in the amount of paid and unpaid labour used on farms between 1939 and 1944. Over 7 per cent was attributable to hired labour and 4 per cent to family labour exclusive of the farm operator. Only 2·7 months of hired labour were used in 1944 as compared with an average of 4·3 months in 1939; and 5·4 months of unpaid family labour were available in 1939 as compared with 4·6 months in 1944.

The main decrease in farm labour numbers occurred on the larger farms where the economy of and the use of mechanization was possible. Farms less than 250 acres of cropland actually used an increase of 2·8 per cent of labour in 1944 as compared with 1939; farms between 250 and 400 acres of cropland decreased the labour by 6·2 per cent; those between 400 and 550 acres decreased the labour by 12·0 per cent; and farms over 550 acres decreased the labour by 15·5 per cent. As indicated, increase in labour efficiency was effected mainly on the larger sized farms.

Farmers were asked to indicate the additional labour which they would employ under more normal conditions and with the present farm set-up. This amount averaged 3·2 months for 594 farms. Farms less than 250 acres of cropland would need 0·5 months; farms between 250 and 400 acres would need 2·3 months; farms between 400 and 550 acres would need 3·1 months; farms between 550 and 700 acres would require 5·0 additional months; and farms over that size would need an additional 5·2 months.

Changes in Cultural and Cropping Practices.—Many changes were made in the war years in cultural and cropping practices. Some of the reasons for these changes were scarcity of farm labour, technical and scientific advances and knowledge gained from actual farm practice over a relatively long period of years. Actually, about 58 per cent of the farmers in the representative sample obtained by the survey indicated that they had made a major change in these farm practices in that period.

A tabulation of the major change in cultural and cropping practice of each farmer showed that 32·5 per cent attributed theirs to a switch from ploughing to surface tillage in the preparation of the land. By using a one-way disc, with or without a seeder box attachment, they were able to handle the cropland or in many cases to increase it with a reduced labour staff.

Less wheat and more coarse grains, or a response to the Wheat Acreage Reduction Bonus policy, was the major shift on 19·2 per cent of the farms. Change from a three year crop rotation to a two year crop rotation was of major importance on 15·1 per cent of the farms. The practice of using a seeding attachment on a one-way disc instead of the regular grain drill was the major change on 7·1 per cent of the farms.

The practice called "Indian" summerfallow, of leaving the land idle for one year or more instead of following the usual and conventional practice of summerfallow has been gaining favour in this and other comparable areas of the prairies. In the rural municipality of Fertile Valley No. 285, 21·9 per cent reported "Indian" summerfallow in the first position, and it was the most important major change indicated. In two other rural municipalities located in the northeastern corner of the area this practice was also of primary importance. This method seems to be associated with lighter textured soils and used principally to prevent soil drifting. In the war period, however, it has been as a labour saving measure. The use of the press drill instead of the single or double disc drill was also an important change on the light textured soils in these three municipal divisions. Other changes of minor importance were, strip farming, continuous cropping and the use of the rod weeder instead of the disc or cultivator.

Farmers were requested to indicate the post-war intentions respecting power and equipment. About 28 per cent planned changes in power only, while an additional 27 per cent wanted changes in other farm equipment as well as power machinery. Approximately one-quarter planned changes in harvesting equipment, with the balance indicating plans for changes in seeding and tillage equipment only.

Changes planned in power machines in order of preference were: a change from steel wheel to rubber tired; larger power units; from horses to tractor; gasoline burning to diesel type tractors; the addition of a farm truck; and from wheel type to crawler type tractors. In harvesting equipment the trend was towards self-propelled combines.

Changes in Farm Organization and Management.—In addition to the change in farm practices, farmers were asked to indicate the major change made in farm organization and management associated directly with the farm business. Some of the replies indicated a transitional stage in long time changes, while in others the emergency measures relating to wartime production were apparent.

Table 1 gives the major change for those indicating a change, arranged according to size of farm. Generally farmers located on the small farms and on light textured fine sandy loam and sandy soils made less changes than the larger sized farms on the clay and heavy clay soils.

Nearly half of the major changes were associated with an increased use of farm power and equipment and with farm operators working harder. These two changes seemed to be of equal importance. Many farm operators, particularly those located on the large sized farms of the superior type soils were forced to shift their activities from a supervisory capacity to a position of an active farm labourer. These men, many of whom normally would be retiring, were obliged to work more hours per day and more days per week, particularly in the rush spring and fall periods.

The relative importance of each major change varied according to the size of farm and soil type. For farms less than 250 acres of cropland in 1943, hired custom work and a decrease in size of farm unit were the major items of change.

TABLE 1.—MAJOR CHANGES AFFECTING FARM ORGANIZATION SINCE 1939 AS A RESULT OF THE LABOUR SHORTAGE, ACCORDING TO SIZE OF FARM. ELROSE-ROSETOWN-CONQUEST AREA. 1944 ECONOMIC SURVEY

	Size of Farm (Acres in Cropland in 1943)													
	Up to 249		250–399		400–549		550–699		700–849		850+		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Operator worked harder	1	9·1	11	18·6	11	20·4	12	26·1	3	13·6	19	33·9	57	23·0
Postponed details	......	......	6	10·2	2	3·7	5	10·9	4	18·2	5	8·9	22	8·9
Hired custom work	4	36·4	13	22·0	2	3·7	5	10·9	......	......	3	5·4	27	10·9
More neighbourly co-operation of labour	1	9·1	......	......	5	9·3	3	6·5	2	9·1	3	5·4	14	5·6
Changed crop rotation	......	......	......	......	1	1·8	1	2·2	1	4·6	2	3·6	5	2·0
Decrease in livestock	1	9·0	5	8·5	6	11·1	5	10·8	2	9·1	4	7·1	23	9·3
More power and equipment	......	......	15	25·4	15	27·8	8	17·4	8	36·4	12	21·4	58	23·4
Change from threshing to combining	......	......	2	3·4	6	11·1	1	2·2	1	4·5	5	8·9	15	6·0
Decrease in size of farm unit	4	36·4	7	11·9	6	11·1	6	13·0	1	4·5	3	5·4	27	10·9
Total with change	11	100·0	59	100·0	54	100·0	46	100·0	22	100·0	56	100·0	248	100·0
Total with no change	51	......	98	......	72	......	39	......	36	......	34	......	330	......
Per cent having change	......	17·7	......	37·6	......	42·8	......	54·1	......	37·9	......	62·2	......	42·9

More operators on large sized farms worked harder, used more power and equipment, tended to let the small jobs and details go undone, and changed from threshing to combining, than was the case in pre-war years.

Neighbourly co-operation and exchange of farm labour was of importance on all sizes of farms located on the clay loams, clays and heavy clay soils. About 8 per cent said this was the major change on these soils as compared with only three per cent on farms on the fine sandy loam and none on the farms on sand. A decrease in live stock numbers was of some consequence on 9·3 per cent of the farms but this was not the case on the light textured soils.

The average age of farm operators in this area, according to the representative sample, was 55 years. Approximately 69 per cent of the farm operators were between 50 and 69 years of age and 8·0 per cent were 70 years or over. Only 1·7 per cent were less than 30 years and 8·4 per cent were less than 50 years. This information would serve to indicate that a large turnover in farm ownership and operation of farms can be expected in this area in the next five or ten years, probably considerably greater than any turnover since the early homestead days.

A general question regarding retirement in the immediate post-war period was asked of all farm operators. A relatively large number, 37·5 per cent indicated that they planned to retire from active farming. This proportion is relatively higher than the normal amount. A tabulation arranged by soil group showed that 42·5 per cent of the farmers located on the superior heavy clay soils intended to retire as compared with only 16·7 per cent of those farming land on sandy textured soils. Generally a greater proportion of the operators of large sized farms intended to retire in the post-war period than was the case on the smaller sized farms. There was some indication that the farm operators on the smaller sized farms were older. This indicated, in a general way, the ability of farm operators on the larger sized farms located predominantly on the clay and heavy clay soils to support themselves and their charges for the balance of their lifetime.

Many changes in the farm organization during this period were of a permanent nature while others were of a temporary need in order to overcome scarcity of farm labour and materials. All will have an effect on the future farm picture in this area.

THE SIZE OF DAIRY FARM BUSINESS AND ITS RELATION TO OPERATORS' EARNINGS[1]

H. L. Patterson

The size of farm business is important. It concerns the farm operator, the extension worker, the agricultural educator, and the administrator. It concerns everyone affected directly or indirectly by the prosperity of agriculture, since the size of farm business is known to be related to the operator's earnings.

A study of costs and returns on dairy farms for four years in Alberta and for two years in Manitoba has been completed. It is hoped that the data obtained will aid in understanding the relationship between size of business and operator's earnings. In a review of recent literature on farm management studies in the United States and Canada, it was noted that without exception the authors had found that a relationship did exist between the size of the farm business and the operator's labour earnings. Some had found that when prices were low, the relationship was inverse, that is the larger the business the larger the loss, or the less that was left for the operator.[2] Table 1, taken from the Alberta dairy study, indicates that in the case of the condensery shippers in 1942-43 and for cheese shippers in 1941-42 this relationship existed because prices and crop yields were unfavourable. Nevertheless, the studies have shown that larger earnings are usually associated with larger businesses. Unfortunately most farm management studies have stopped at that point. No attempt has been made to define the types of size-earning relationships. This is essential before it is possible to visualize clearly what changes occur with increasing size of farm business.

Theoretically there are several types of relationship, depending on the complexity of factors affecting the business. The first may be simple, the larger the size of business the larger the earnings, with no variations from this rule. The second may reflect earnings subject to the law of diminishing returns and would automatically decline after the farm business has increased to a certain size. A third possibility is that maximum size of business is determined by physical factors which set the upper limits of size, regardless of all other factors. The fourth is that the relationship varies as price and weather conditions change. There is also a fifth possibility that the relationship varies with the relative efficiency of the individual farm business.

Simple Relationship.—If the relationship were only a simple one with no modifications, then, presumably farms would have grown rapidly to a huge size in order to take advantage of the increased returns. In Canada this has not occurred to any large extent and in certain enterprises, such as dairying, there are few units that could be called large when compared with manufacturing plants in terms of investment or men employed. There is no reason why farms could not incorporate and provide adequate capital to develop a large business, if the economic conditions warranted. Some of the cattle ranches operate as a corporation. However, we have seen from Table 1 that increased size is not always associated with increased earnings. The relationship is not a simple one of more size, more earnings.

Diminishing Returns.—Taylor[3] states that "The law of increasing and diminishing returns operates when increasing amounts of labour and equipment are associated with or applied to a given area of land . . . At any given time and

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[1] Operator's labour earnings represents what is left for the operator's labour and management after all expenses including interest on investment, have been deducted. It includes a credit for all products used in the house at wholesale prices and a credit for the use of the house at eight per cent of its value.

[2] See University of Saskatchewan Agricultural Extension Bulletin No. 105, p. 19, "Changes in Farm Income and Indebtedness in Saskatchewan, 1929 to 1940".

[3] Taylor, Henry C., "Outlines of Agricultural Economics", p. 150.

Table 1.—The Effect of Size as Measured by Crop Acres, Alberta Dairy Study

Crop acres per farm	Number of farms	Average labour earnings	Average crop acres
	No.	$	ac.
Rosemary and Coaldale Cheese Farms, 1941-42—			
Less than 110	24	1,118	74
110 or more	26	1,041	166
All Condensary Farms, 1942-43—			
Less than 210	25	762	115
210 or more	24	747	363

place there is a certain proportion in which the factors combine most profitably. If less or more than a certain amount of labour and equipment be associated with a given area, the profits will be less than they should be. The proportion which is right for one farm at a given time may be wrong for another. This may be due to differences in the physical and biological character of the land or to differences in location with respect to the market. Also it is true that the adjustment of proportions which yield maximum profits on a given farm at one time may be wrong at another time on the same farm. This will result when there is a change in the relative costs of the factors of production, or in the price of the product.

"Changes in the relative abundance of the factors of production, resulting in changes in their relative cost to the producer, arise out of differences in the rates of increase of the supply of land, labour and equipment." If this statement of the law is accepted then the law applies to the intensity of operation on a given area rather than to the scale of operation. The desired end is operation at the intensity of production which will yield maximum earnings. A change in the area operated then would only come under the influence of the law of diminishing returns, if it changed the intensity of operation. The effect of the law then might be expected to appear, if at all, in an enterprise such as dairying, where an increased size might involve an increased application of labour and capital to a given area. In Table 2 from the Alberta study in 1940-41 it is indicated that there is normally no decline in earnings when the largest sizes of herd are reached. In every case the highest earnings are associated with the largest size of herd. This was true in each year of the study for hogs as well as for dairy cattle. It must be remembered that the study covered several years and several different groups of producers, so that a similar result in all years and all groups of producers would not be likely to occur by chance alone. On the basis of the existing information there is no general tendency towards lower earnings with any increase in size of business, as applied to the size of dairy farm businesses which normally exist. Therefore, the law of diminishing returns could not have been a factor limiting size of dairy farms.

Physical Limits.—The physical limits to the size of farm business could arise from problems of management, disease or location. If stress were laid upon the problems of management as a limit to size of business, then the possibility of delegated responsibility would have to be ignored. In practice the majority of hired helpers on farms have to be capable of working independently. It is a small step from assuming responsibility for a small working unit to assuming responsibility for a larger working unit of the same type. In Ontario the herdsman has emerged as a definite class of responsible hired help and most of the owners of large dairy herds have delegated part of their responsibility to their herdsman. To check the effect of the use of hired help on the operator's earnings, data were tabulated in the Alberta and Manitoba dairy studies (Table 3).

TABLE 2.—EFFECT OF SIZE OF DAIRY HERD, ALBERTA DAIRY STUDY, 1940–41

Number of milk cows per farm	Number of farms	Average labour earnings	Cost per pound of butterfat	Average number of cows
	No.	$	cents	No.
45 Wholemilk farms—				
Under 15	17	778	51·4	12
15 to 19	12	946	47·1	17
20 to 24	6	1,119	45·6	20
25 or more	10	2,677	45·4	33
49 Inspected Cream Farms—				
Less than 10	3	981	27·9	8
10 to 14	17	860	38·5	12
15 to 19	13	484	36·3	17
20 to 24	12	712	36·8	21
25 or more	4	1,357	40·1	38
110 Churning Cream and Cheese Farms—				
Less than 7	36	666	34·3	5
7 to 9	30	390	28·2	8
10 to 12	20	704	31·0	11
13 to 15	14	1,158	31·0	14
16 to 18	7	237(1)	39·0	17
19 or more	3	1,940	31·5	26

(1) Three farms low in all efficiency factors except size, pulled this group away down.

TABLE 3.—THE EFFECT OF EMPLOYING HELP ON THE FARM, ALBERTA DAIRY STUDY, 1942–43

Percentage of labour hired	Number of farms	Average labour earnings	Cash receipts per man	Average crop acres	Hours of chores per pound of butterfat
	No.	$	$	ac.	hrs.
All Wholemilk Farms—					
Less than 20	23	1,916	2,695	173	0·7
20 or more	30	3,381	3,033	310	0·6
All Cream Farms—					
Less than 10	22	882	1,686	185	1·2
10 or more	26	1,822	2,106	354	1·2
All Condensary Farms—					
Less than 10	31	508	1,519	185	1·1
10 or more	18	1,180	2,017	326	0·9

The results are typical of all other years and other groups. The necessity of hiring help does not provide any insurmountable obstacle and actually aids by increasing the labour efficiency, as shown by the cash intake per man engaged and by the hours of chores per pound of butterfat produced. Disease is usually only associated with increased size of business, if it means increased crowding or more animals on the same ground. It obviously is not a factor limiting size of grain farms, since Western Canada is already accustomed to the sight of continuous grain fields over long distances. Many people when increasing live stock herds or flocks forget to allow for the extra space needed, but not all make this mistake and on the farms included in the study there is little evidence that large farms necessarily took larger death losses due to disease.

Location is hardly a factor in limiting the size of grain farms. With rubber tired tractors and motor trucks in common use, the distance from the railway, or the condition of the roads may be a handicap, but hardly an absolute limit to size of business. In live stock raising, location is more of a problem. Dairy cows must graze not more than a mile from where they are to be milked, if low cost of production is to be maintained. However, some of the co-operators in the dairy study overcame this problem by milking the cows at the pasture and others by maintaining more than one herd. Many beef cattle ranchers maintain several herds quite successfully as do also some dairymen and hog raisers.

Effect of Prices and Crop Yields.—The Census indicates that except in the province of Quebec there has been a tendency to increasing size of farm in all provinces of Canada between 1911 and 1941. There are three cautions essential in appraising these figures. One is that the basis of indicating the number of farms has changed in the 1941 Census. The average size of farm is affected, since acres per farm is the total acres divided by number of farms. Bulletin No. 22 of the Dominion Bureau of Statistics indicates that the 1941 Census shows 23,000 less farms in Canada than would have been shown by the methods used in any previous Census. The second caution is that in Western Canada the homestead was only 160 acres. A study of pioneer areas in Western Canada made in 1930[4] indicated that the one-quarter section was not an economical unit and the tendency to shift rapidly to a maximum size that one family could work, began as soon as the three year requirements were fulfilled and title issued. This was partly required by the necessity of paying taxes after three years. Since the number of homestead entries reached a peak in 1911 and has continued at a lesser rate until discontinued in recent years, this would influence the normal trend to larger sizes in the prairie areas to a marked degree. A similar effect was felt in the bush country to the north and east, where the sale of lumber or wood and the work of cutting it, provided a living for several more families before clearing was complete, than afterwards.

The third caution is that the minimum volume of sale with which an operator can continue to operate has been increasing constantly and in some cases rapidly. There are no absolutely self-sufficing farms left in Canada. They all depend on some purchases of clothing, fuel, food or condiments. This is especially the case on the prairies and in the east where the trees have all been cleared off. The necessity of increasing the minimum sale from the farm has been due to an improvement in the items in commerce, and a constantly increasing number of things which are considered essential to a minimum existence, for which cash must be found. Taxes and medical services also require more cash than formerly.

If these three factors inducing an increase in size of business, as shown in the Census, are considered then the actual increase in size of farm which has taken place must seem small when contrasted with what has happened in industry during the same interval.

When prices or crop yields are unfavourable, the effect of increased size of farm business may be to lower the earnings or to increase the loss. Large farms are more vulnerable to unfavourable economic conditions than are small farms which can operate on a subsistence basis in depressions and keep losses to a minimum. "The record of price relationships during the 19 year period, 1921 to 1939 inclusive, reveals that 14 were unfavourable to agriculture."[5] Thus it can be seen that with unfavourable years, the rule, rather than the exception there, would be little incentive to increase the size of the farm business in Western Canada from 1921 to 1939. It would also seem that a period of continuing prosperity might be associated with an accelerated trend towards larger farms.

Effect of Management.—Since unfavourable economic factors can reverse the relationship between size and earnings, then it should be realized that unfavourable conditions can also be created by factors within the control of the farm operator. Unfavourable conditions might arise from a lack of efficiency on the individual farms. Higher earnings may be obtained by an increase of receipts or a decrease of expenses, or both. Farm receipts must come from the sale of live stock and their products or from crops. Farm expenses all represent an outlay of labour or of capital. Capital in this sense includes both current capital to meet day to day expenses and the carrying charges on longer time investment, such as land and machinery. The size of farm business is a composite of the amounts of live stock, crops, labour and capital which a farm operator has, and it must make its effect felt through them. It follows that any variation in the efficiency of these four factors will vary the effect of size registered through them. In other words, it makes a difference whether the number of good cows, or the number of poor cows, is increased. This variation in effect of size is demonstrated in Table 4 from the Alberta dairy study. This table shows the effect of having the five efficiency factors, including size of business, above average. As the number of factors above average increased, the general trend was towards much higher earnings. In order to check the effect of low efficiency when associated with large size of business, those farms which were below average efficiency in all factors except size were tabulated separately. That is the farms segregated were low in production per cow, in crop yields per acre, cash receipts per man engaged and in turnover on capital, but above average in acres of cropland. The earnings on these farms are presented at the bottom of Table 4.

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[4] Unpublished thesis by author, p. 168.

[5] From a report submitted to the Technical Committee on Agricultural Production, United Nations Interim Commission on Food and Agriculture, September, 1944, by Dr. J. F. Booth.

TABLE 4.—THE CUMULATIVE EFFECT OF FIVE FACTORS AFFECTING INCOME
Alberta Dairy Study, 1942–43

Number of Factors Average or Better*	53 Wholemilk Farms		47 Cream Farms		49 Condensery Shippers	
	Number of Farms	Average Labour Earnings	Number of Farms	Average Labour Earnings	Number Labour Farms	Average Labour Earnings
	No.	$	No.	$	No.	$
0	4	−620	6	506	5	237
1	11	1,929	7	−698	7	135
2	13	2,571	9	1,350	13	59
3	15	3,605	18	2,082	14	1,465
4	7	3,985	7	2,090	10	1,512
5	3	5,262	....	....	....	....
High in size and low in other four factors	2	2,144	1	−6,724	3	−139
High in size and one other factor, very low in other three	....	....	....	....	5	−609

*The five factors are live stock production, crop yields, labour receipts, capital turnover, size of business

The wholemilk farms received more from the dairy than their costs of production on the average while the other two groups did not. The wholemilk farms which were low in everything but size, were still better off than those that were low in all factors including size of business. In the other two groups, however, the farms that were larger than average, but low in all factors other than size, had much lower earnings than those which were low in size as well. When the efficiency factors are low, the relation between size and earnings may be reversed, especially if the external economic conditions, such as prices are also unfavourable.

Summary and Conclusions.—Our concept of the relation between the size of farm business and the operator's earnings will be clearer if the true relations are better understood. There is evidence that the relation is not a simple one in that it may work in reverse on occasion. It does not seem to be subject to the law of diminishing returns; at least within the sizes of dairy farms which normally prevail. Physical requirements of farm operation provide many problems to enlarged size, but probably no definite limits. Unfavourable circumstances, such as low prices, low yields, or low efficiency in the operation of the individual farms, seem to be the big causes of variation from a simple relationship. On the other hand, under favourable circumstances, size of business is shown to be a main factor in determining the operator's earnings.

WARTIME DEVELOPMENTS IN THE CANADIAN LIVE STOCK AND MEAT TRADE. I

H. K. LECKIE[1]

The magnitude of the task of producing and handling Canada's wartime meat supply should not be underestimated. It is one which called for, and still demands, maximum efforts and co-operation from Canadian farmers, the packing industry, marketing, transportation and storage agencies, and government services.

The coming of V-E and V-J days has not completed the job. This fact was brought home by the re-imposition of meat rationing in Canada on September 10, 1945 in order that this country might more effectively share available supplies with a meat-hungry world.

At this point, after passing through a rather remarkable chapter, it may be useful to briefly review the position of the Canadian meat and meat animal industry—past, present and prospective.

Position of the Industry at the Outbreak of War.—Just prior to the outbreak of World War II, hog production was the only very encouraging feature of the meat animal industry in Canada. The live stock survey of the Dominion Bureau of Statistics at June 1, 1939 revealed that numbers of cattle on farms, excluding milk cows, were at the lowest point since 1931. Similarly numbers of sheep and lambs had been steadily declining, and had reached the lowest point in 13 years. Hog numbers on the other hand, recovering from the setback due to drought conditions on the Prairies were sharply on the increase and at June 1, 1939 were higher than at any previous year with the exception of three—1924, 1931 and 1932. The development of an increasing surplus of grain in Western Canada, leading to a favourable hog-feed margin, and the existence of a substantial export bacon quota to Britain had already stimulated the bacon hog industry to a considerable degree before war came, and it needed only the extra spark to touch off an unprecedented expansion.

One of the first clear-cut appeals to Canadian farmers was for more bacon hogs. Later increased demands for wool, and eventually for beef and all meats, resulted in a steady building up of live stock numbers to the highest levels in history.

With respect to live stock handling facilities, these appeared before the war to be ample to handle all normal requirements for many years to come. Packing plant facilities, particularly at Winnipeg and Edmonton, and also at other centres, had undergone recent improvement and expansion. As a result, the industry entered the war with an excess capacity so substantial that few people visualized how soon the slack would be taken up. Similarly stockyards, stock and refrigerator cars and cold storage warehouses appeared in 1939 to be well able to cope with any possible peak requirements. Here too, later developments proved how quickly situations may change.

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[1] Formerly on loan from the staff of the Economics Division, Dominion Department of Agriculture, to the Canadian Meat Board; now Associate Professor, Department of Agricultural Economics, Ontario Agricultural College, Guelph. For previous articles by the same author on various phases of the wartime meat trade see the Economic Annalist for October, 1940; February, 1941; October, 1941; October, 1942; May, 1943; February, 1944 and February, 1945.

The Bacon Board.—Early in September, 1939, Dominion Department of Agriculture press releases indicated that bacon would be one product likely to be required by Britain and other allied countries in considerable quantities. Commencing about mid-September, active negotiations got underway between the Canadian Government and the British Ministry of Food for the purchase by contract of a substantial amount of Canadian bacon. Negotiations proceeded steadily during the next few weeks and the Dominion Department of Agriculture, in conjunction with Provincial Departments of Agriculture, began to develop a program for increased hog production.

On December 4, 1939 terms of a bacon agreement running to October 31, 1940 were announced, calling for weekly shipments of 5,600,000 lb. of bacon. Shortly after, on December 13th (P.C. 4076) a Bacon Board was set up to implement the terms of the agreement. On December 20, 1939 the members of the Board were appointed together with an eight-man Advisory Committee representing various interests in the live stock and meat trade. At this point the marketing of Canadian bacon entered a new phase.

All members of the Board and Advisory Committee continued to act throughout the entire period of the war, the only change in personnel being occasioned by the death of one of the members of the advisory body. In June 1943 the original Bacon Board was reconstituted as the Meat Board (P.C. 4187) and given certain additional responsibilities relative to the export of beef and other meats. This did not involve any change in personnel and the Board simply took on its new name and extra functions without interruption.

On January 20, 1940 the Bacon Board formally assumed its responsibility of supervising delivery of Canadian bacon to Britain under the first bacon agreement. From then on, the scale of operations of the Bacon Board and its later successor, the Meat Board rapidly expanded, both in volume and variety of products handled. Up to the end of August the seaboard value of meat products handled through the Board under various agreements amounted to approximately $679 million. In 1945 the wide range of meat and meat products being shipped through the Board to various agencies, viz. the British Ministry of Food, UNRRA and Military Relief, included cured Wiltshire bacon and cuts, frozen pork offals, canned pork, lard and tallow, hog casings, frozen beef, both in carcass and boneless form, canned luncheon meat, meat spread, meat paste, canned sausage meat, canned blood sausage, frozen mutton and lamb, ox-tails, pork jowls and fat backs.

TABLE 1.—QUANTITIES AND SEABOARD VALUES OF MEAT PRODUCTS HANDLED BY THE MEAT BOARD UNDER VARIOUS EXPORT CONTRACTS

—	1939–40	1940–41	1941–42	1942–43	1944–45	Total to date
			(in thousand)			
Cured Wiltshire bacon and cuts......lb.	331,482	425,618	600,013	658,178	957,276	2,972,567
$	60,860	69,920	118,810	141,364	212,274	603,228
Fresh frozen Wiltshires..............lb.	....	....	....	16,883	8,628	25,511
$	....	....	....	3,702	1,961	5,663
Pork offals..........................lb.	2,300	12,690	10,651	11,845	21,122	58,608
$	234	1,287	1,124	1,399	2,494	6,538
Canned pork..........................lb.	....	....	5,784	12,696	38,981	57,461
$	....	....	1,583	3,572	11,106	16,261
Lard.................................lb.	....	4,412	....	....	8,973	13,385
$	....	375	....	....	1,180	1,555
Hog casings..........................lb.	....	....	453	761	1,386	2,600
$	....	....	568	975	2,028	3,571
Mutton and lamb......................lb.	....	....	....	....	1,153	1,153
$	....	....	....	....	257	257
Frozen beef..........................lb.	....	....	....	....	204,883	204,883
$	....	....	....	....	42,201	42,201
Total value of products................	61,094	71,582	122,085	151,012	273,501	679,274

Pork Products.—Prior to 1939 Canada had been supplying only from 20 to 25 per cent of the United Kingdom's imported bacon requirements of about 850 million lbs. annually. Although a Canadian quota of 280 million lbs. had been established under the 1932 Ottawa agreements, the closest approach to this figure before the war had been the 192 million lbs. shipped in 1937.

Nevertheless the accumulating grain surpluses in Western Canada, the continuance of a favourable ratio between hog prices and grain prices and a persistent bacon hog production campaign in most provinces had already interested many farmers in the possibility of raising more hogs. When war finally came in 1939 a record pig crop was ready for market. This enabled an agreement to be promptly negotiated calling for export bacon shipments at the rate of at least 291 million lbs. annually—a figure subsequently exceeded during the first year of war. As former European sources of Britain's bacon supply were cut off, there were successive agreements for larger and larger quantities of Canadian bacon. The climax came in 1944 when all-time record marketings enabled Canada to ship nearly 700 million lbs. or about 85 per cent of the entire British wartime bacon ration.

The substantial increase in hog slaughterings, accompanied by an increase in the average carcass weight (table 2) resulted in a very large increase in the total annual output of pork products from 1939 through 1944. By V-J the total amount of Canadian bacon delivered to the British Ministry of Food in World War II had reached almost 3 billion pounds, or more than the total of shipments in the previous quarter century.

As well as bacon, other pork products supplied in substantial quantities to Britain included frozen pork offals (liver, kidneys and tongues), canned pork loaf and ham loaf, hog casings for sausage manufacture, and lard.

TABLE 2.—NUMBERS, AVERAGE WARM DRESSED WEIGHT AND TOTAL DRESSED WEIGHT OF HOGS SLAUGHTERED IN INSPECTED PLANTS, 1939–45

Year	Numbers	Average warm dressed weight	Total dressed weight
1939	3,628,369	150·4	545,799,548
1940	5,454,930	147·8	806,298,097
1941	6,273,951	153·7	964,281,897
1942	6,196,850	164·0	1,016,169,987
1943	7,173,556	169·5	1,216,233,623
1944	8,766,441	165·4	1,449,711,826
1945 (1) (Jan. 1—Aug. 31)	3,942,707	162·8	641,801,160
TOTAL	41,436,804	160·3	6,640,296,138

(1) January 1—August 31

The factors of greatest importance in the rapid expansion of hog production (table 2) up to 1944 included the following:

(1) Plentiful surplus stocks of Western feed grains, (including wheat) and a ready market for this grain through hogs.
(2) A guaranteed market for substantial quantities of bacon at assured prices, for at least a year in advance.
(3) A favourable relationship between prices for hogs and prices for grain and other farm products. (This was particularly true in early war years but less so after 1943).

In the face of these powerful economic motives, and with the additional patriotic incentive, it is not surprising, that hog production in Canada increased during the war to the point where in 1944 slaughterings were nearly 2½ times the pre-war level. The bulk of the increase took place in the Prairie Provinces where there was greatest room for expansion because of ample feed grain supplies. Thus we find that in 1944, out of a record inspected hog slaughter of 8,760,000 head, 5,688,000 or 65 per cent were in Western Canada. In 1939 comparable figures showed only 1,548,000 hogs or 43 per cent of the total slaughter in the West.

At the same time, with Western Canada hog production in 1944 increasing by approximately 4 million head over 1939, slaughterings in the five Eastern Provinces increased by one million head—an increase largely made possible by substantial shipments of grain from Western to Eastern Canada under the Dominion Freight Assistance Policy. Although increasing hog production at a comparatively moderate rate, eastern farmers were at the same time stepping up production of other products—dairy, poultry, special crops—to the limits of their available labour and feed supplies.

The hog production cycle in Canada as well as in the United States reached its crest in the fall and winter of 1943-44. By V-E day marketings had fallen off substantially from peak levels, and during the summer of 1945 hog slaughterings in Canada were the lightest since the first year of war. The reasons for this decline are somewhat complex, but among the more important factors are the following:

(1) The gradual whittling down of the grain surplus with a resulting psychological effect on the Prairie grain and live stock producers. In Eastern Canada the poor 1943 crop was a serious setback.

(2) The gradual loss by the bacon hog industry of the advantageous economic position enjoyed early in the war and the reduction of the hog-feed margin to average levels.

(3) The shortage of farm help in the face of increased demands for almost all farm products.

In contrast to World War I, when much of the bacon shipped overseas from Canada went heavily-boraxed in ordinary stowage, all Canadian bacon handled through the Board in World War II was delivered to seaboard in refrigerator cars and placed on board refrigerated vessels for ocean transport. The standard wartime cure developed for Canadian Wiltshires was somewhat harder than peacetime standards, this was to ensure better keeping in the face of existing transport and storage problems in Britain. However, in spite of this, Canadian bacon delivered to the ultimate consumer in Britain was much superior as to quality and condition than in 1914-18.

Considering the rapid expansion of hog production from 1939 to 1944, the high percentage of carcasses going into export processing, and the high proportion of export Wiltshire made from hog carcasses originating in the newer hog-producing areas of Western Canada, the general quality of export bacon was well-maintained. In 1944 approximately 52 per cent of export Wiltshires fell into the top or "Grade A Sizeable" category, compared with about 60 per cent in 1939. Due to the increase in average carcass weights, however, the percentage of over-sizeable sides (over 65 lb.) increased from 22 per cent in 1939 to 39 per cent in 1944. In other words Canadian export Wiltshires in wartime, although of good general quality, were somewhat fatter and heavier than in pre-war years for the reasons indicated.

The negotiation of successive export bacon agreements calling for firm prices throughout the year had the effect of virtually eliminating the normal seasonal variation in Canadian hog prices. Although this was one of the contributing factors to increased production, it also had the undesirable effect of disturbing the seasonal pattern of production. The natural trend toward heavier fall runs and lighter midsummer marketings was further accentuated. To counteract this, and to equalize export bacon shipments, the Board found it necessary to have large quantities of uncured bacon frozen and stored during the months of heaviest slaughterings. Later, during periods of slack production, this product was removed from storage for curing and shipment overseas. This process serves to even out export deliveries but increases the marketing costs to the industry, and suggests more attention should be directed to year-round hog production.

TYPES OF FARM ORGANIZATION IN THE SOVIET UNION

L. Lorinez

At present, Soviet farms belong to one of three categories: Individual farms, Collective farms (Kolkhoz or artel), and State farms (Sovkhoz).

Individual Farms.—This kind of farm is now found almost exclusively in the new Soviet territories of the three Baltic countries, as well as in Karelia, Bessarabia, Bukovina and the former Polish Ukraine. Very few individual farms have survived on the pre-war territory of the Union. There are a few isolated small holdings in remote areas where collective action is not possible.

Collective Farms.—A total of 99·9 per cent of all peasant farm lands were consolidated in collective farms by 1940. But collectivization was a gradual process with several types of transitory organizations existing prior to 1935.

These transitory types may be related to two main categories:

1. Partnerships, in which land and the means of production remained the members' private property; joint tilling of the soil was the main object.

2. Co-operative farms or "artels", organized to unite their members' land, labour and other means of production.

Artel representatives held a congress in 1935, at which uniform bylaws were adopted for all co-operative farms (artels) and this "Model Statute of the Collective Farmers' Artel" became, henceforth, obligatory for all collective farms. From that year, "collective farm" became the proper designation for farms conforming to the "Model Statute of the Collective Farmers' Artel". Since 99·9 per cent of the land belonged to this type by 1940, at the present time any agricultural enterprise that is not an individual or a State farm, is covered by the Model Statute and is properly called "collective farm" or "Kolkhoz", although one still encounters references to "co-operative farms" or artels".

The land belongs to the State, but a grant for its use in perpetuity is given to the collective farm by the Government. The following are common property: Draft animals, farm implements, seed, fodder for jointly owned live stock, farm buildings, processing plants. The non-socialized private property for Kolkhoz members is composed of: A plot of land ($\frac{5}{8}$ to $2\frac{1}{2}$ acres) adjoining the dwelling; the house itself; live stock not exceeding one cow, two calves, two sows with litter, 10 sheep and/or goats; 20 beehives, and any number of rabbits and poultry. These numbers are increased considerably in the case of specialized live stock farms or under nomadic, pastoral conditions.

The socialized property of Kolkhoz members is estimated at cash value. From 50 to 75 per cent of this value is considered as the collective farmers' share. The balance is paid into the Kolkhoz sinking fund, in addition to an entrance fee collected from every collective farmer. Children are taken into the Kolkhoz as full members upon reaching 16 years of age.

If a collective farmer wishes to withdraw from the Kolkhoz, his share is paid back to him, but he is entitled to receive land somewhere else, if available.

State Farms.—A State farm of Sovkhoz is the equivalent of a Canadian illustration farm, but it is owned by the State. At the outset, it served as a model for the organization of collective farms and to acquaint peasants with the operation and advantage of large-scale farming methods. One such farm, the "Gigant" in the Ukraine, was visited by more than 120,000 peasant delegates from a radius of thousands of miles between 1929 and 1931.

At present, State farms operate along more specialized lines of research and demonstrate the practical application of scientific progress on a large scale. Artificial insemination is one of their activities which is generally known abroad.

State farm employees are civil servants, much the same as those on Canadian experimental farms, and these units are not primarily operated for output or profit as are the collective farms.

CO-OPERATIVE ORGANIZATIONS AND THE RESTORATION OF EUROPEAN FARM PRODUCTION

Reprint from the *International Labour Review,* Vol. L, No. 4, October, 1944, 32 pages.

This study, published by the International Labour Office depicts the part played by various European co-operative organizations in the marketing of the principal agricultural products and the potential contribution of these co-operatives toward the restoration of agricultural production in Europe.

The co-operative movement has suffered in many European countries from the effects of war. In those countries where it is still active it is playing an important role in supplying the needs of the people and will play a still more important part when the task of rehabilitation and reconstruction is undertaken. Studies have also been made by U.N.R.R.A. to explore ways in which the Administration might work with the co-operative organizations throughout the world.

At the outset of the bulletin it is pointed out that one of the first steps towards rehabilitation will be to replenish European farms with the requisites of agricultural production: feeding stuffs and fertilizers, seeds, tools and machinery, live stock, fuel and other commodities. The question arises then as to how they may be distributed to those needing them in the most rapid efficient and economical way.

It is felt that organizations of farmers themselves, particularly those formed expressly for the distribution of farm supplies will be one of the most appropriate channels. European agriculturalists have gradually built up a network of rural supply co-operatives, some of which are specialized and deal only with particular agricultural requirements. Altogether there are in Europe (excluding the U.S.S.R.) approximately 107,000 agricultural co-operatives with distributive functions in regard to agricultural requisites besides some 2,600 consumers' co-operatives which function as supply co-operatives.

The network of rural supply co-operatives in Europe is so organized as to be of great assistance in the arduous task of rehabilitation. The organizations are widely dispersed and can reach even remote villages and districts and are themselves easily accessible through the various federations in the different countries.

Another point that is brought out is that the various types of rural supply co-operatives in Europe also handled import business in agricultural requisites. Co-operative organizations in countries outside the European continent are in a position to assist in the rehabilitation of European agriculture and may feel more inclined to do so if their contribution passes through co-operative channels.

After showing how the means of production are handled co-operatively, the article proceeds to describe how the marketing process has been organized on a co-operative basis.

The function of marketing agricultural produce is performed by marketing co-operatives specialized by products, non-specialized agricultural purchase and sale co-operatives and at times by rural credit co-operatives.

Cereals are handled for the most part by general purchase and sale co-operatives, whereas the marketing of livestock and meat is conducted mainly by specialized co-operatives. Dairying has been organized on a co-operative basis and these co-operative dairies are to be found in almost every country. Other products that are marketed co-operatively include eggs, fruits and vegetables, textiles, wool, flax, silk, honey and tobacco.

The bulletin concludes by stating that although co-operative marketing organizations were suppressed in some European countries they were not prevented from functioning altogether.

> "It is therefore permissible to conclude that as soon as conditions of production and exchange return to normal, these various co-operative bodies will be ready to resume their functions, not only as a vast and ordered mechanism of marketing, but also as a mechanism guiding and regulating production. This co-operative machinery, which has already proved its worth in the ten years of agricultural crisis preceding the present war, will necessarily occupy a large place in any schemes of rehabilitation and reconstruction".

THE AGRICULTURE OF WALES AND MONMOUTHSHIRE by A. W. Ashby (Advisory Economist for Wales, Professor of Agricultural Economics) and I. L. Evans (Principal, University College of Wales, Aberystwyth) Cardiff. 1944.

In the preface, the authors state: "This little book attempts to survey the main features of Welsh Agriculture with special emphasis upon the years immediately preceding the outbreak of the second World War." The book is divided into 14 chapters, well illustrated with graphs and diagrams, and a statistical appendix.

FOOD FOR THE WORLD. Edited by Theodore W. Schultz. University of Chicago Press. 1945.

The subject of food is very much to the forefront these days. As the introduction states: "Among the professional workers concerned with food for the world an array of unsettled issues affecting international relations has arisen, as is evident from our experience with food for relief and from the proposed United Nations Organization for Food and Agriculture growing out of the Hot Springs conference in 1943. Certainly, these issues have not been bounded by local or national lines: the state of nutrition, the growth of population, and the distribution of food supplies are matters which have become world-wide in scope. Food for relief is but one small facet; relief activities, however, have served to focus attention upon the many important international implications of the food problem." The book contains 23 essays. "Each essay was conceived as an integral and necessary part of bringing together the contributions of research in nutrition, agricultural ecenomics, population, and international relations."

THE ECONOMICS OF POOR LAND ARABLE FARMING (Based on surveys on difficult farming areas in the East Midlands) by S. M. Makings. Edward Arnold & Company. London, 1944.

In Chapter 7, Summary and Conclusions, the author states: "This study was undertaken with a dual objective. First, to serve as an examination of the defects of poor land arable utilization within the existing scheme; and, second, to provide a basis for some consideration of the broader aspect of poor land use from the national viewpoint."

In a land use survey being made by the Economics Division, Dominion Department of Agriculture in the Elrose-Rosetown-Conquest area, Saskatchewan farmers were asked the following question: "Do you plan on retiring from active farming after the war?"

A relatively large number, 217 out of 578, contributing to this question, or 37·5 per cent, indicated that they plan to retire from active farming. The relation of the number of farmers intending to retire to the size of the farm was not consistent. However, more farmers on larger farms plan to retire from active farming after the war as compared with those of smaller farms.

NOTES

Since 1936, the year the Agricultural Adjustment Administration first became effective, crop yields in the United States have increased steadily; during the war years they have averaged more than one-fourth higher than the 1923-32 average. The 1943-44 report of the Administration stresses that Agricultural Adjustment Administration conservation practices not only have helped to increase crop yields and farm income, but they also have restored vital minerals to the soil, which in turn improved the food and feed consumed by people and live-stock. Nearly 2 million tons of superphosphate and over 19 million tons of limestone were applied under the 1943-44 Agricultural Adjustment Administration program, enriching the soil and increasing both the volume and quality of production. During the same year, other practices completed by farmers under the program included reseeding over 1·5 million acres of depleted pasture, constructing over 988,000 dams in waterways or gullies, planting 43,000 acres of forest trees and harvesting over 3 million acres of hay and legume seed.

The Provision of Intermediate Term Credit for Farmers.—To provide intermediate term credit, the last Dominion Parliament amended the Bank Act, (August 9, 1944) and passed a "companion" Act, the Farm Improvement Loans Act, 1944 (August 9). By amendment of the Bank Act, the chartered banks are authorized to make loans to farmers for the purchase of farm machinery and live stock; the installation of agricultural equipment or a farm electric system; the erection of fencing or works for drainage; the construction, repair, alteration or extension of any building or structure on a farm; and any work for the improvement or development of a farm designated in the regulations. Security may be taken on agricultural implements, equipment and farm electric systems. Under the terms of the Farm Improvement Loans Act, the government guarantees the chartered banks against loss up to 10 per cent of the amount loaned by it under this Act. As a whole the guarantee applies to an aggregate total of $250,000,000 for banks provided the loans comply with certain regulations: (1) they must be made within a period of three years from the commencement of the Act; (2) the maximum loan is $3,000; (3) the rate of interest must not exceed 5 per cent; (4) the term is not to exceed 10 years. On loans in excess of $2,000, and repayable in more than 5 years, the bank may take a mortgage on the farm property as security.

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